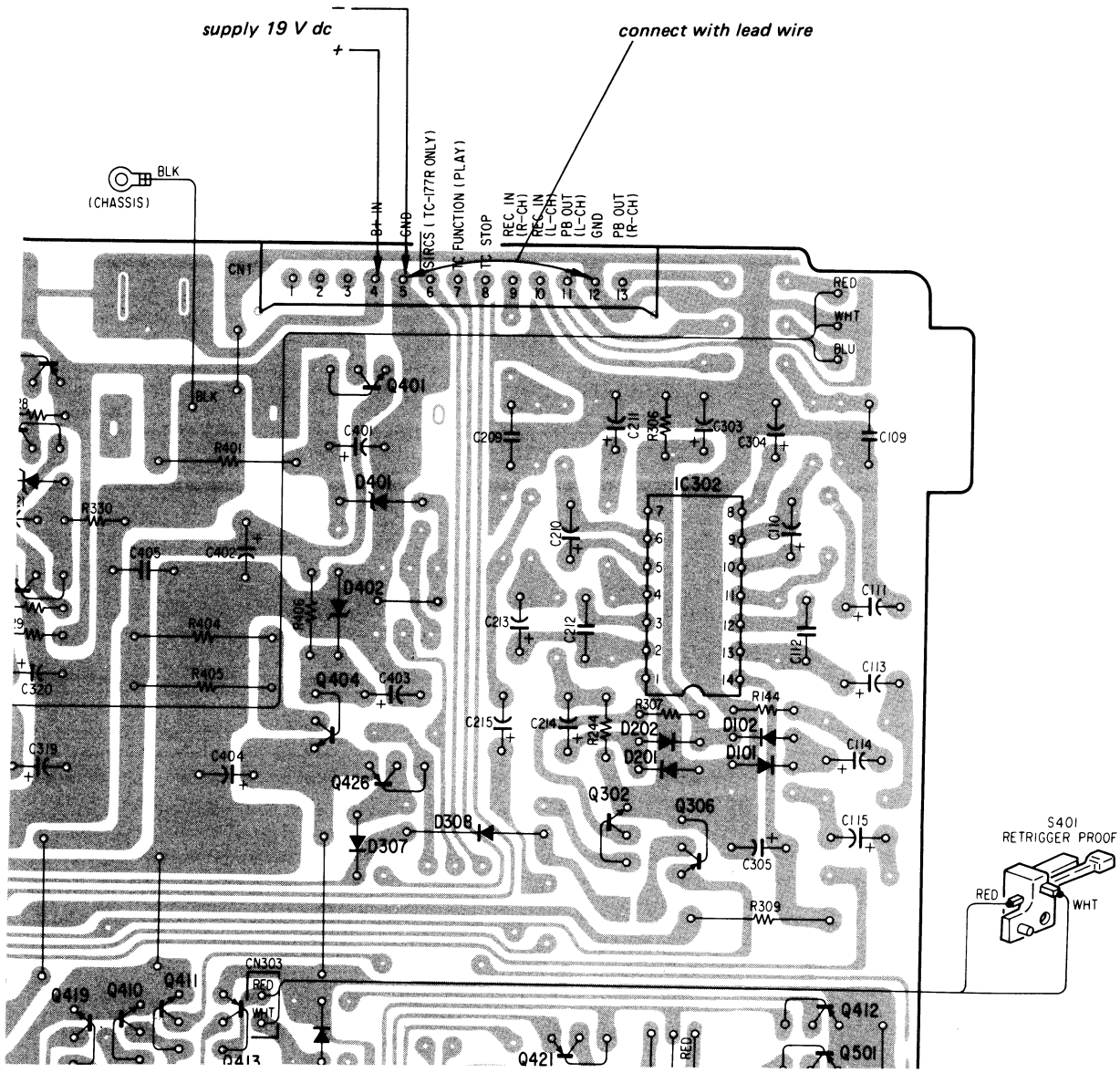
STEREO CASSETTE DECK
(TC-177R)

Tape Transport Mechanism Type	TCM-150R10

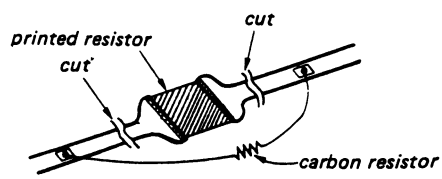
SERVICING NOTE

- Voltage measurement should be made under the following condition.

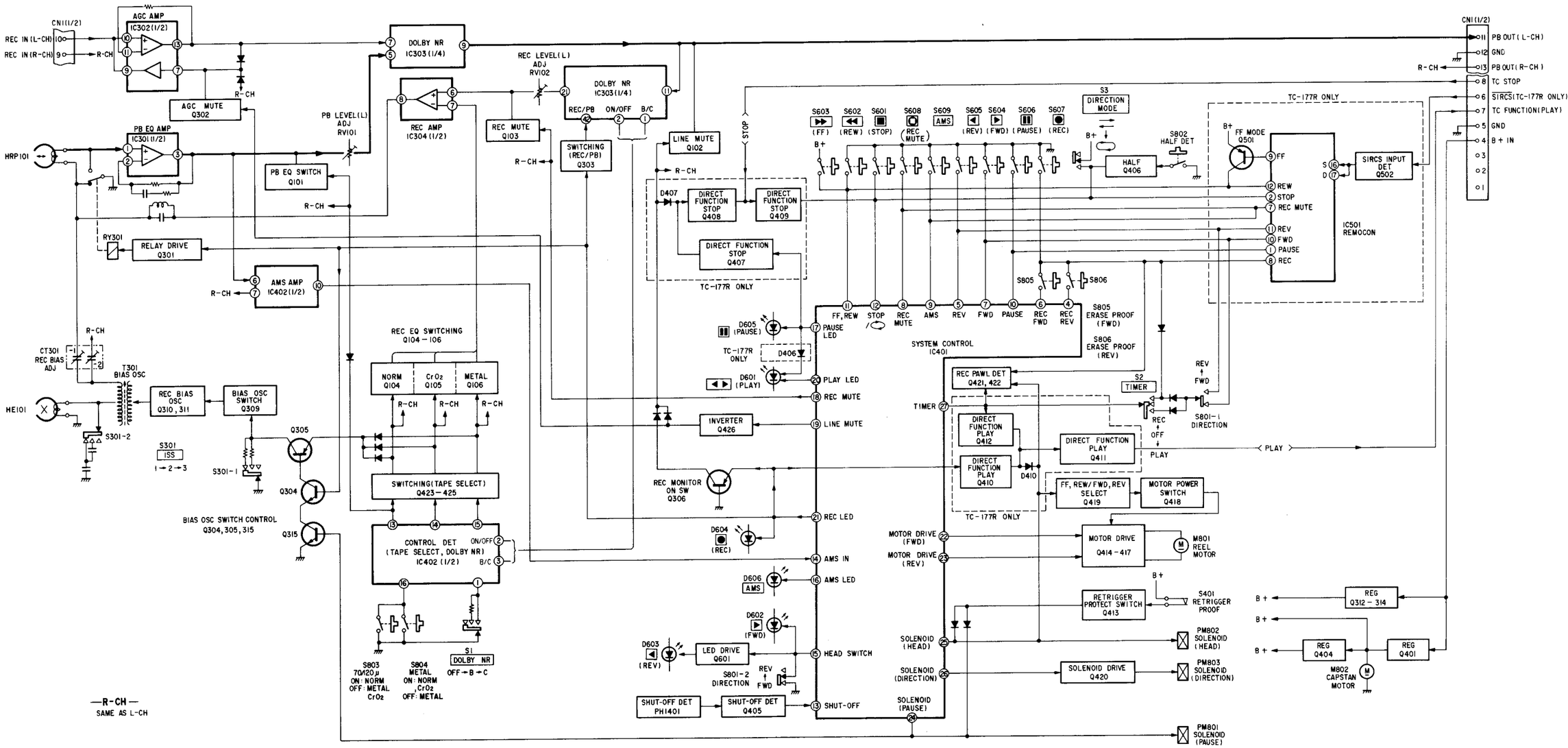


- **Repairing printed resistor**

Cut both sides of the resistor and solder the carbon resistor having same value in place of printed one on the conductor side.



SECTION 1
BLOCK DIAGRAM



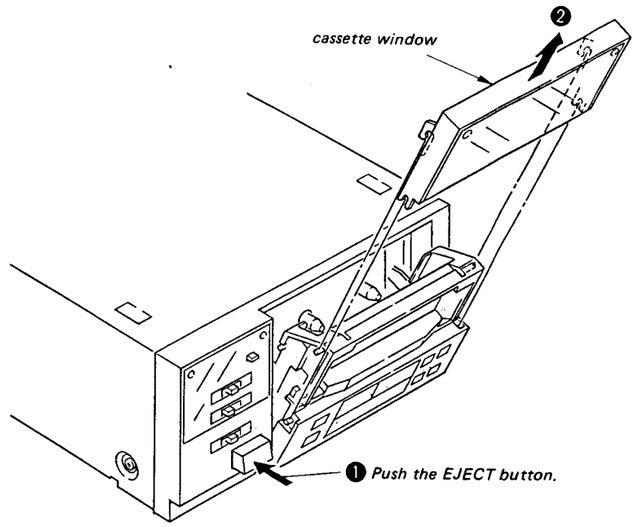
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

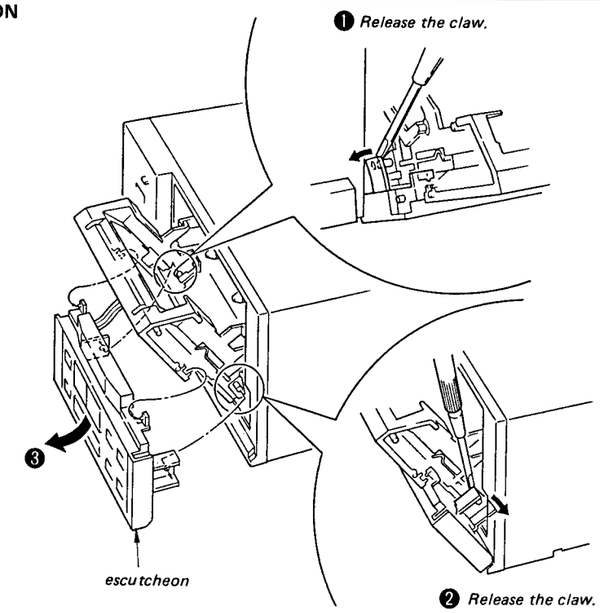
CASE REMOVAL

Remove case by taking out four screws securing case.

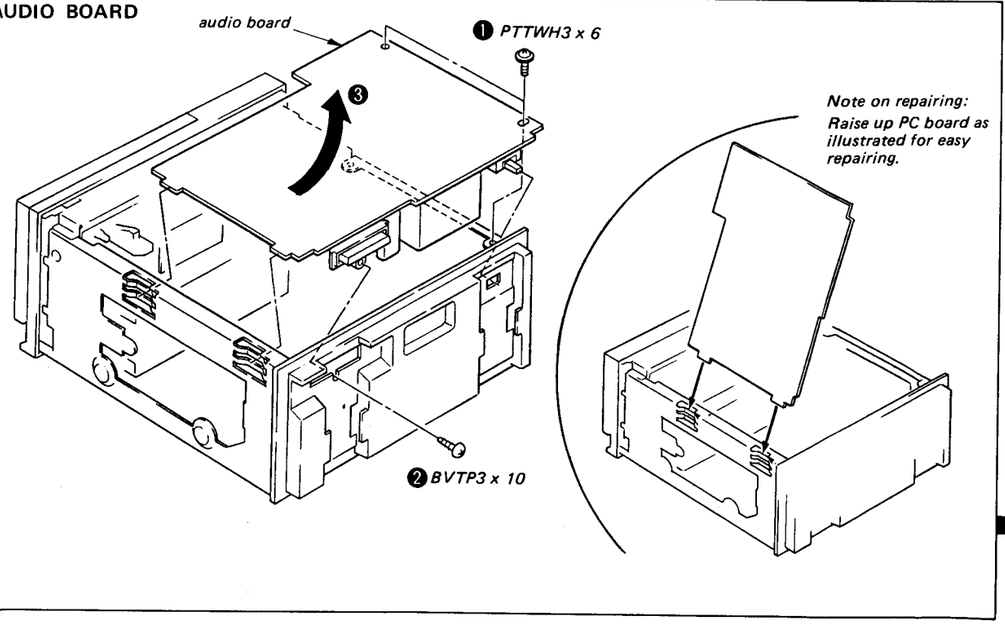
CASSETTE WINDOW



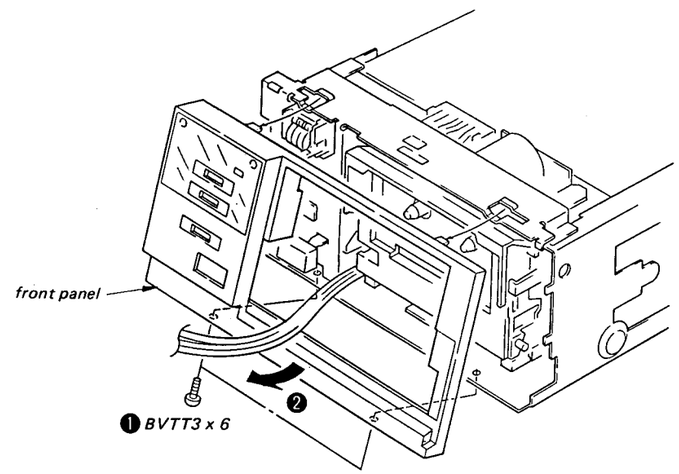
ESCUTCHEON



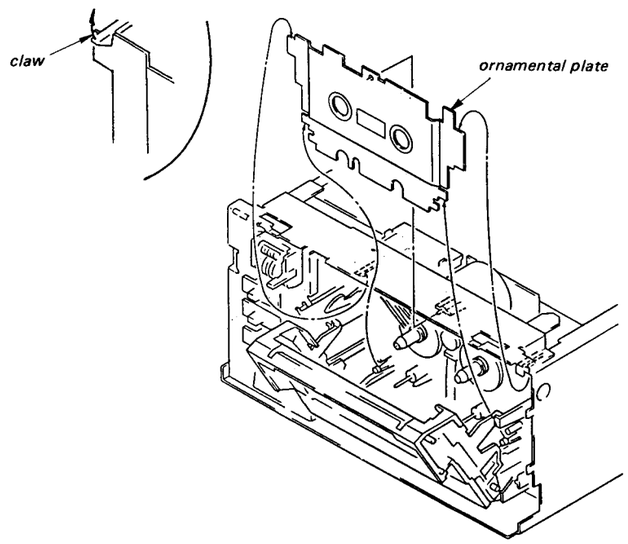
AUDIO BOARD



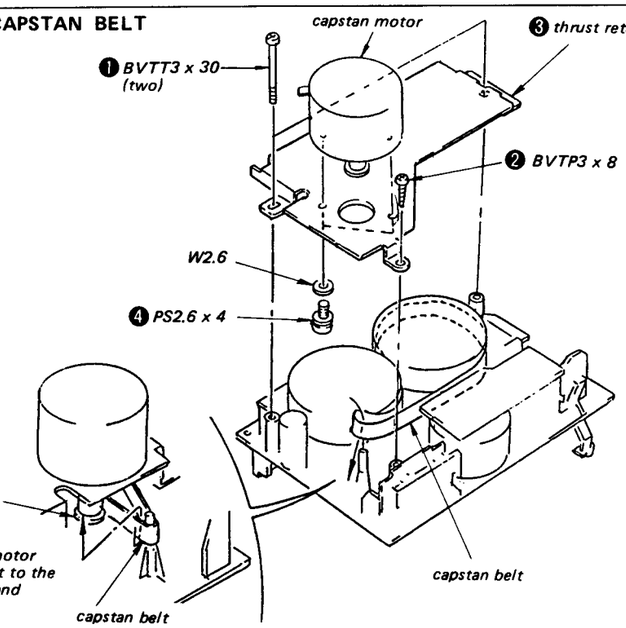
FRONT PANEL



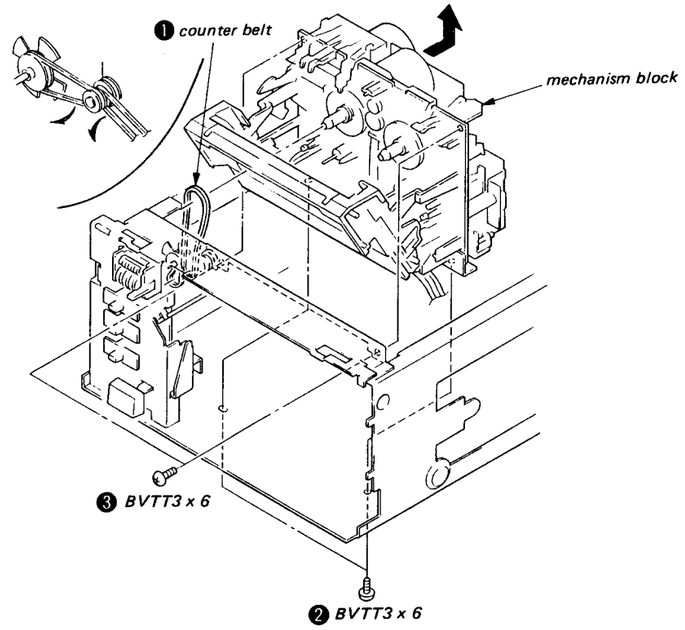
ORNAMENTAL PLATE



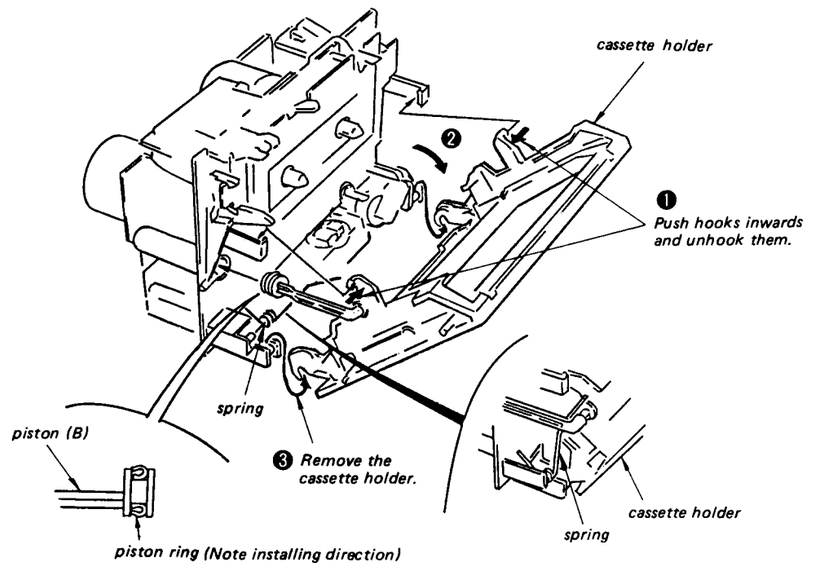
CAPSTAN MOTOR AND CAPSTAN BELT


capstan motor
❸ thrust retainer
❶ BVTT3 x 30 (two)
❷ BVTP3 x 8
W2.6
❹ PS2.6 x 4
pulley
When reassembling, set the motor section after hooking the belt to the stud as shown in the figure, and then hook belt to the pulley.
capstan belt
capstan belt

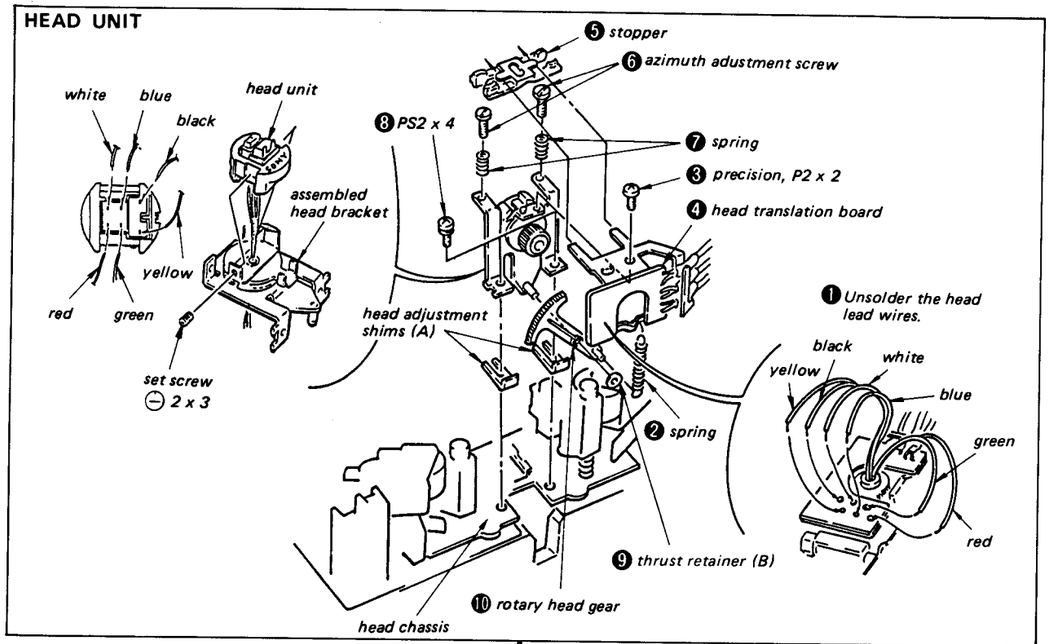
MECHANISM BLOCK AND COUNTER BELT



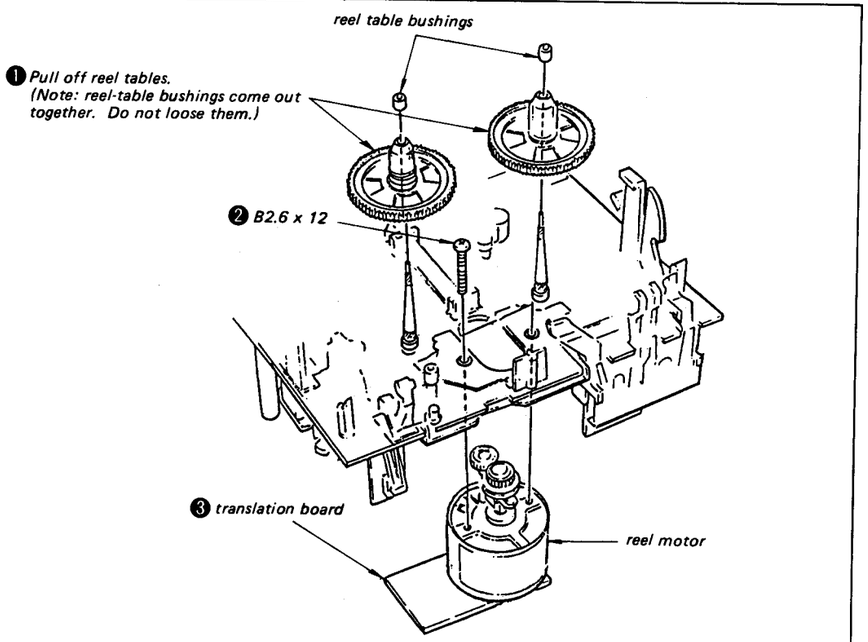
CASSETTE HOLDER



HEAD UNIT



REEL MOTOR


reel table bushings
❶ Pull off reel tables.
(Note: reel-table bushings come out together. Do not loose them.)
❷ B2.6 x 12
❸ translation board
reel motor

MEMO

SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
   record/playback/erase head rubber belts
   capstan
   pinch roller
2. Demagnetize the head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

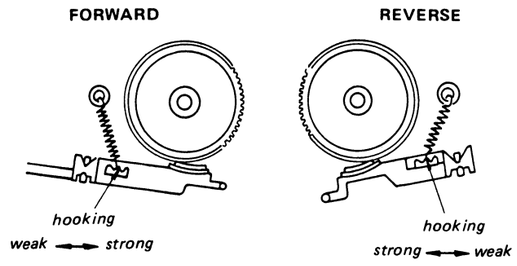
Torque Measurement

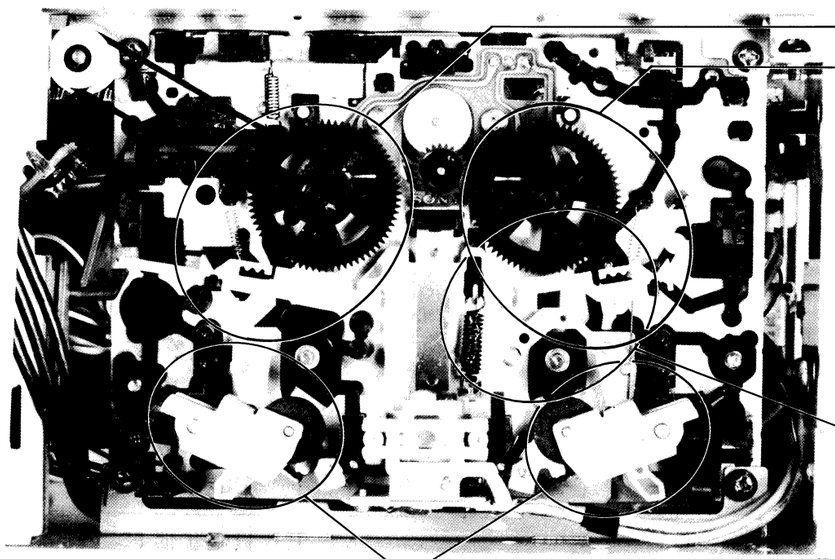
Torque	Torque meter	Meter reading
Forward	CQ-102C	28 – 60 g·cm (0.39 – 0.82 oz·inch)
Reverse	CQ-102RB	
Fast Forward and Rewind	CQ-201B	80 – 150 g·cm (1.1 – 2.07 oz·inch)
Forward Back Tension	CQ-102C	2.5 – 5.5 g·cm (0.03 – 0.07 oz·inch)
Reverse Back Tension	CQ-102RB	2.5 – 7 g·cm (0.03 – 0.09 oz·inch)

BACK TENSION ADJUSTMENT
– Forward and Reverse Playback Modes –

Forward: Torque Meter CQ-102C, Torque 2.5 – 5.5 g·cm (0.03 – 0.07 oz·inch)

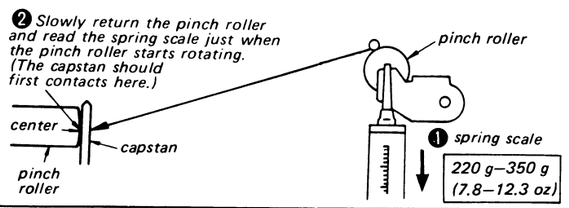
Reverse : Torque Meter CQ-102RB, Torque 2.5 – 7 g·cm (0.03 – 0.09 oz·inch)





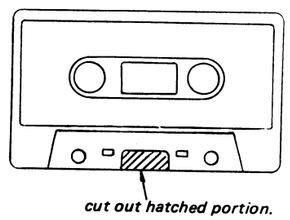
Pinch Roller Pressure Measurement

– Playback Mode –

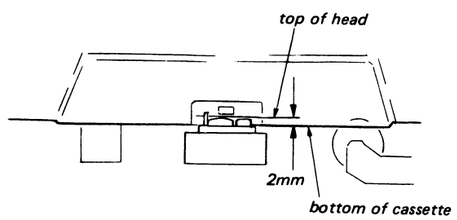

❷ Slowly return the pinch roller and read the spring scale just when the pinch roller starts rotating. (The capstan should first contacts here.)
pinch roller
center
capstan
pinch roller
❶ spring scale
220 g–350 g (7.8–12.3 oz)

Head Position Adjustment in AMS mode

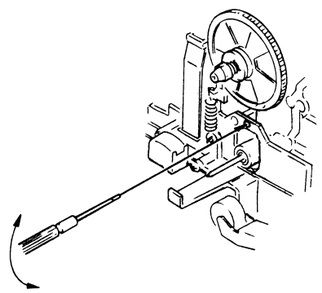
1. Prepare an adjustment cassette as shown below.

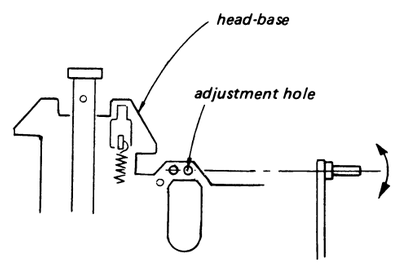


2. In AMS mode, comfirm that the the distance between top of head and bottom of cassette is 2 mm ±0.1 mm (3/32 inch).



If it is not, insert a small screwdriver to the adjustment hole and adjust the head position by bending a head-base so that the distance between top of head and bottom of cassette is 2 mm±0.1 mm.





Precaution on Replacing

As the head center adjustment and the tape path adjustment are affected each other, do not perform them at the same time.

Note: When the record/playback/erase head is replaced, be sure to perform the preliminary adjustment first.

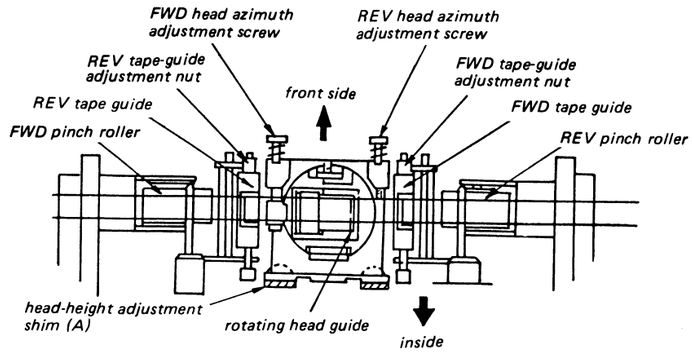
Head Center Adjustment

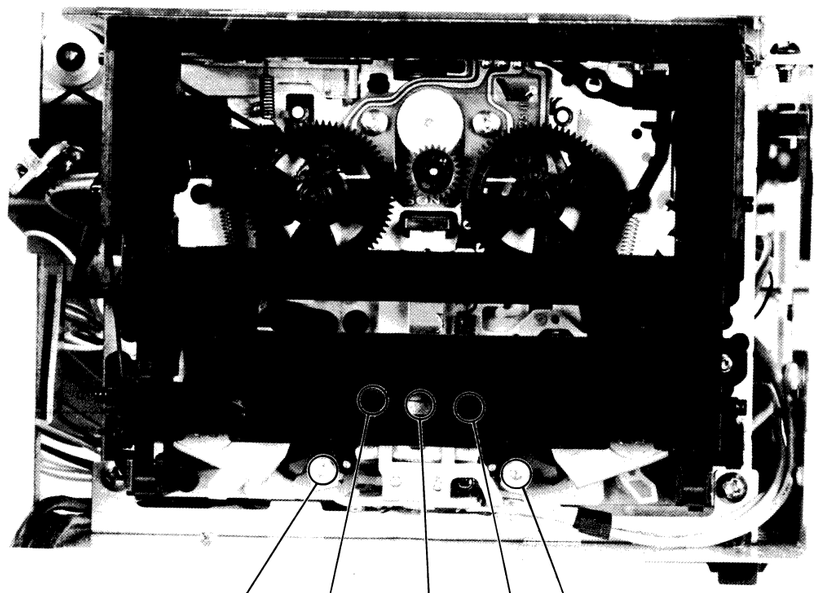
1. Insert a mirror tape cassette, CQ-009C or CQ-012C.
2. Place the unit in forward playback mode.
3. When the lower part of the tape is warped, loosen the head center adjustment screw. (Loosen the screw within one turn.)
4. Place the unit in reverse-playback mode.
5. When the upper part of the tape is warped, secure the adjustment screw. (Secure the screw within one turn.)
6. Repeat steps 2 to 5 several times until there is no warp both in forward and reverse mode.
7. If the warp is not disappeared, repeat steps 2 to 6 after adding or removing the head height adjustment shim (A).
8. After adjustment, lock the head center adjustment screw with locking compound.

Tape Path Adjustment

1. Clean the pinch roller and the record/playback/erase head with soft cloth moistened with alcohol.
2. Mode: playback
   Refer to step 1 of the Record/playback Head Azimuth Adjustment on page TC-16 for the setup.
3. Adjust the FWD azimuth adjustment screw in the forward-playback mode and the REV azimuth adjustment screw in the reverse-playback mode so that the oscilloscope reads the maximum output and lissajous figure is in 30 angle reading on the oscilloscope across the LINE OUT.
4. Adjust the FWD tape-guide nut in the foward-playback mode and the REV tape-guide nut in the reverse-playback mode for an in-phase lissajous pattern.
   The turning amount of the nuts should be within 3/4 turns.
5. Repeat steps 3 and 4 serveral times until no improvement is obtained.
6. Play a mirror tape cassette in the forward-playback mode.
7. Confirm there is no tape curl at the tape guide.

Note: After these adjustments, be sure to perform the Record/playback Head Azimuth Adjustment on page TC-16.



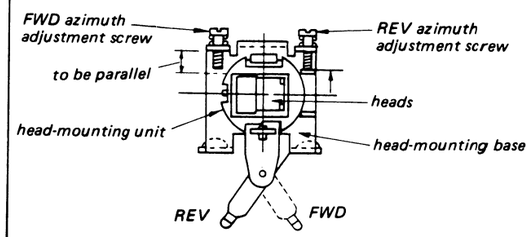

FWD tape guide adjustment nut
REV head azimuth adjustment screw
head center adjustment screw (forward-playback mode only)
FWD head azimuth adjustment screw
REV tape guide adjustment nut

HEAD UNIT ADJUSTMENT WHEN REPLACED

Perform the following preliminary adjustments before proceeding to the Head Center and Tape Path Adjustments.

Preliminary Adjustment

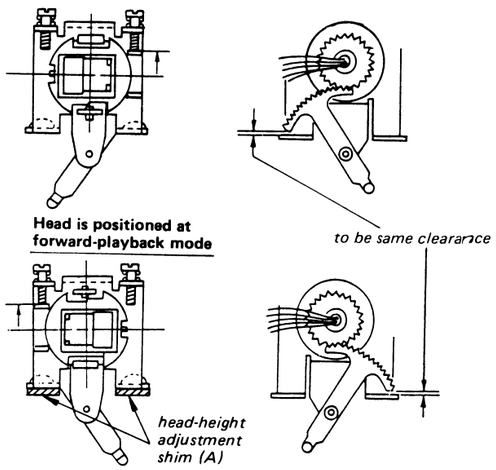
1. Install head-mounting unit on the head-mounting base by threading head lead wires through the round hole in the head-mounting base. Also refer to page TC-9.
2. By adjusting both head-azimuth adjustment screws in both forward-playback and reverse-playback mode head positions, align the head-compartment edge line in parallel with the edge line of the head-mounting unit at the azimuth adjustment screws. (visual adjustment)



Be sure to orient the rotary-head gear as shown below.

Head is positioned at reverse-playback mode

Install rotary head gear.



Head is positioned at forward-playback mode

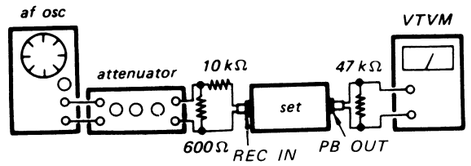
3. Reassemble the head assembly, head translation board, head-height adjustment shims (A), etc, in the reverse manner of disassembly on page TC-9.
4. Perform the Head-Center and Tape-Path Adjustments on pages TC-13 and TC-14.
5. Perform the Head-Azimuth Adjustment on page TC-16.

3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.
  DOLBY NR switch: OFF
  TIMER switch: OFF
  ISS switch: 2
- Standard Record:
  Deliver the standard input signal level to the input jack and control the attenuator to obtain the standard output signal level.

– Record Mode –



Standard Input Level

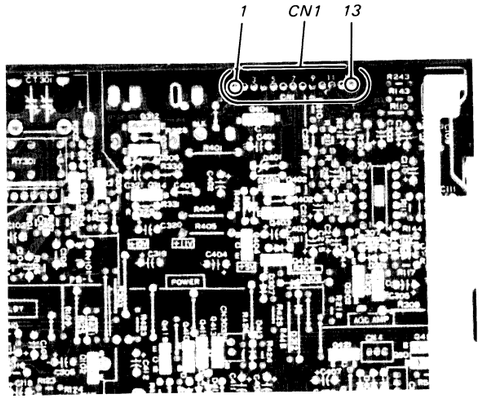
	REC IN
source impedance	10 kΩ
input level	0.44 V (–5 dB)

Standard Output Level

	PB OUT
load impedance	47 kΩ
output level	0.44 V (–5 dB)

Locations of REC IN and PB OUT

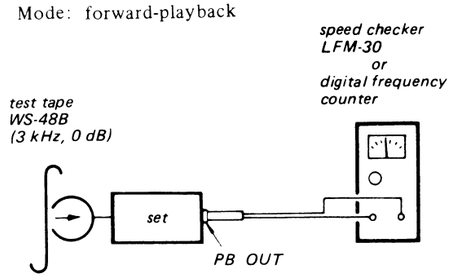
	CN1 terminal No.		
	L-CH	R-CH	GND
REC IN	10	9	12
PB OUT	11	13	12



Tape Speed Adjustment

Procedure:
See the left for locations of REC IN and PB OUT.

Mode: forward-playback

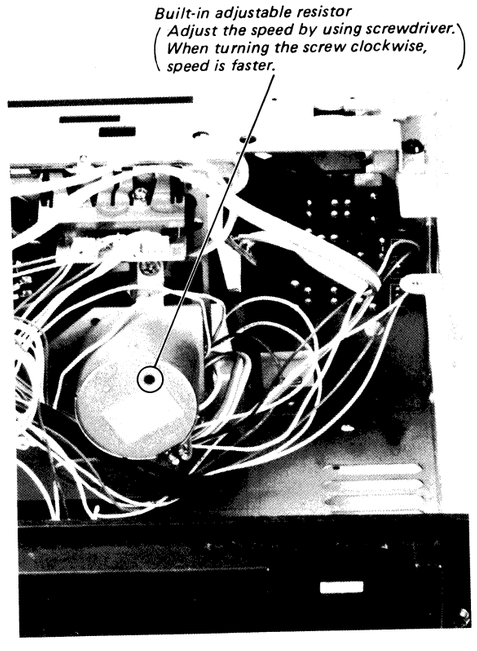


Specification:

Speed checker	Digital frequency counter
–1 – +1 %	2,970 Hz to 3,030 Hz

Frequency difference between the beginning and the end of the tape should be within 0.8% (25Hz).

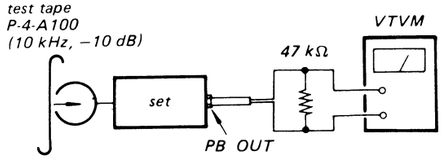
Adjustment Location: Motor (M802)



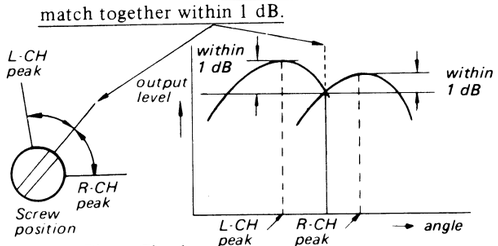
Record/playback Head Azimuth Adjustment

Procedure:
See page TC-15 for locations of REC IN and PB OUT.

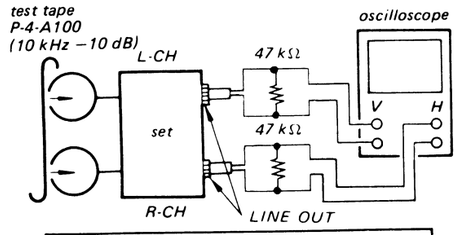
1. Mode: forward-playback

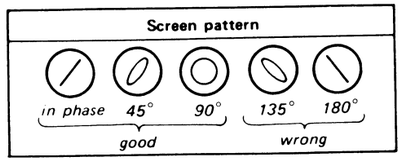


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screws until both of output levels match together within 1 dB.



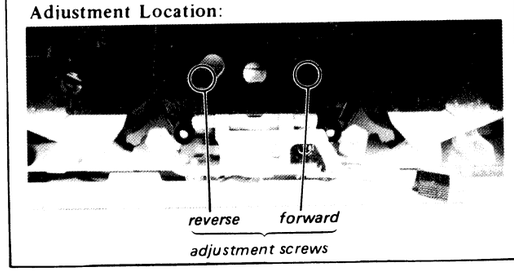
- Phase Check





3. Set in the reverse-playback mode and repeat the steps 1 – 2.
4. After the adjustment, lock the screws with locking compound.

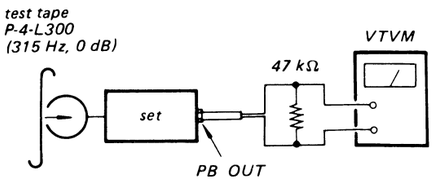
Adjustment Location:



Playback Level Adjustment

Procedure:
See page TC-15 for locations of REC IN and PB OUT.

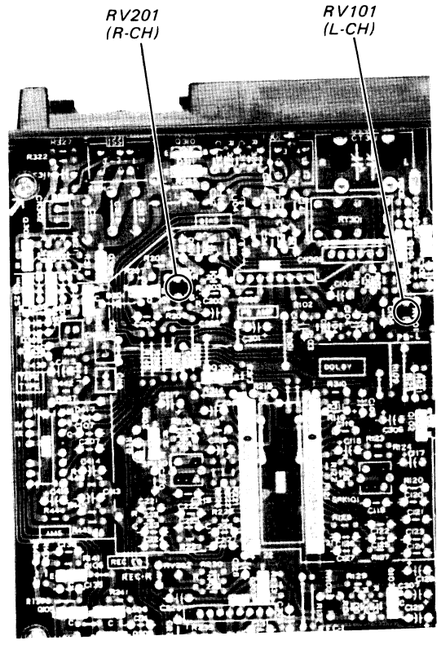
Mode: playback



Adjust the RV101 (L-CH) and RV201 (R-CH) so that the specification is met.

Specification:
PB OUT level: 0.41 to 0.46 V
(–5.5 to –4.5 dB)
Level difference between channels:
less than 0.5 dB
Check that the PB OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: audio board



Note: Before

– audio board

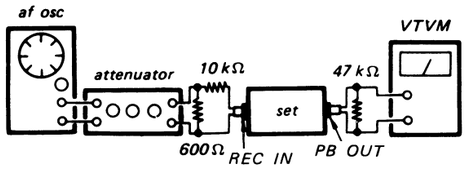
Fig. 1

3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.
  DOLBY NR switch: OFF
  TIMER switch: OFF
  ISS switch: 2
- Standard Record:
  Deliver the standard input signal level to the input jack and control the attenuator to obtain the standard output signal level.

— Record Mode —



Standard Input Level

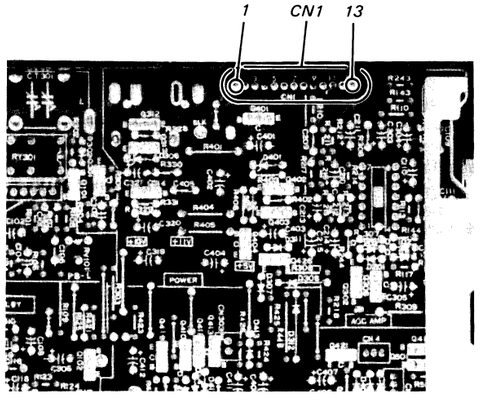
	REC IN
source impedance	10 kΩ
input level	0.44 V (−5 dB)

Standard Output Level

	PB OUT
load impedance	47 kΩ
output level	0.44 V (−5 dB)

Locations of REC IN and PB OUT

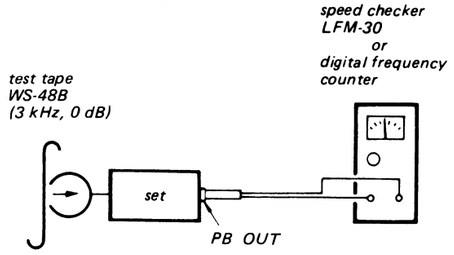
	CN1 terminal No.		
	L-CH	R-CH	GND
REC IN	10	9	12
PB OUT	11	13	12



Tape Speed Adjustment

Procedure:
See the left for locations of REC IN and PB OUT.

Mode: forward-playback

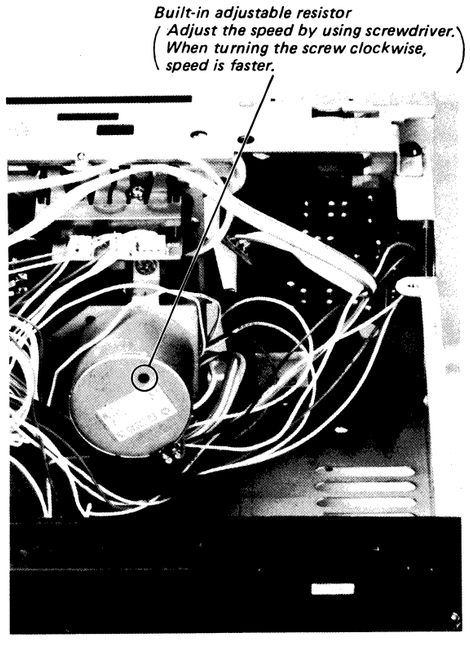


Specification:

Speed checker	Digital frequency counter
−1 −+1 %	2,970 Hz to 3,030 Hz

Frequency difference between the beginning and the end of the tape should be within 0.8% (25Hz).

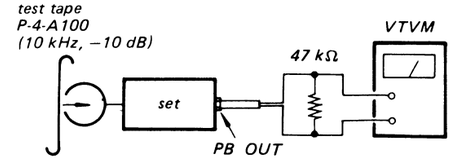
Adjustment Location: Motor (M802)



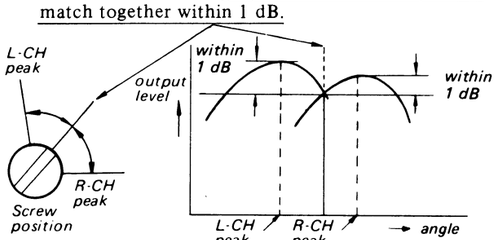
Record/playback Head Azimuth Adjustment

Procedure:
See page TC-15 for locations of REC IN and PB OUT.

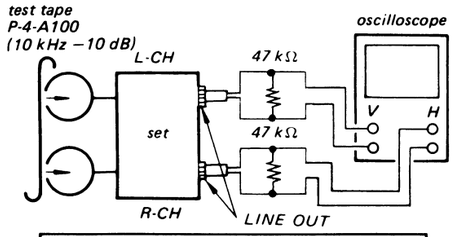
1. Mode: forward-playback

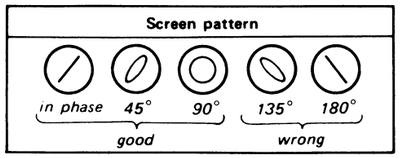


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screws until both of output levels match together within 1 dB.



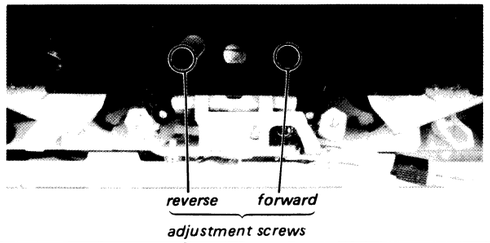
- Phase Check





3. Set in the reverse-playback mode and repeat the steps 1 – 2.
4. After the adjustment, lock the screws with locking compound.

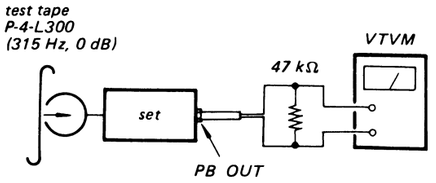
Adjustment Location:



Playback Level Adjustment

Procedure:
See page TC-15 for locations of REC IN and PB OUT.

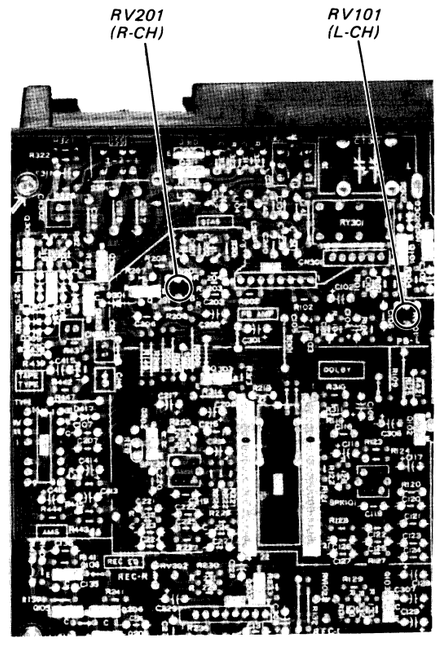
Mode: playback



Adjust the RV101 (L-CH) and RV201 (R-CH) so that the specification is met.

Specification:
PB OUT level: 0.41 to 0.46 V
(−5.5 to −4.5 dB)
Level difference between channels:
less than 0.5 dB
Check that the PB OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: audio board



Note: Before performing Record Bias/Record Level Adjustment, connect pattern.

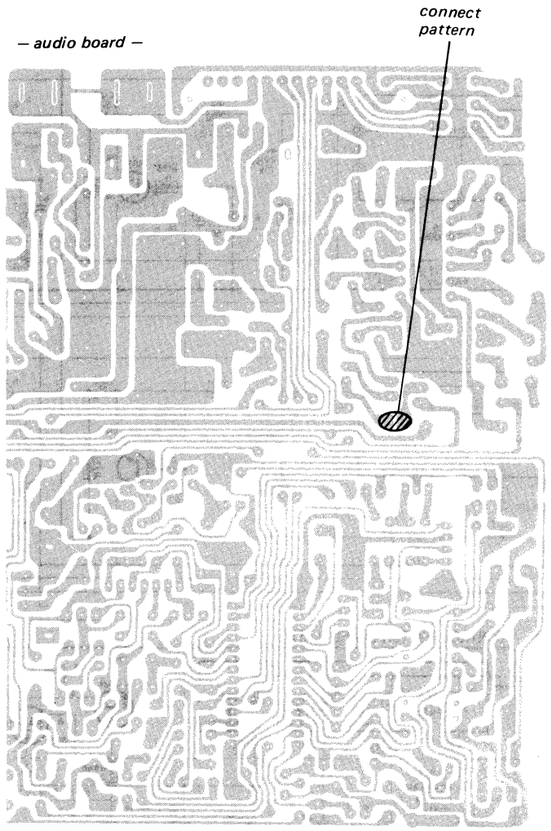


Fig. 1 Connecting Portion at the Adjustment

Record Bias Adjustment

Setting:

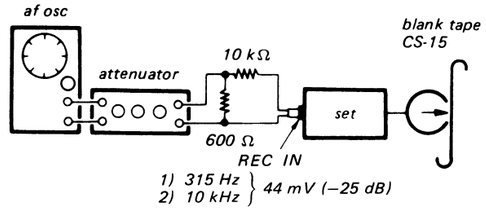
ATTENUATOR: standard record
(See page TC-15.)

Connect pattern as shown in Fig. 1.

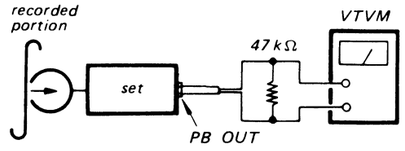
Procedure:

See page TC-15 for locations of REC IN and PB OUT.

1. Mode: record



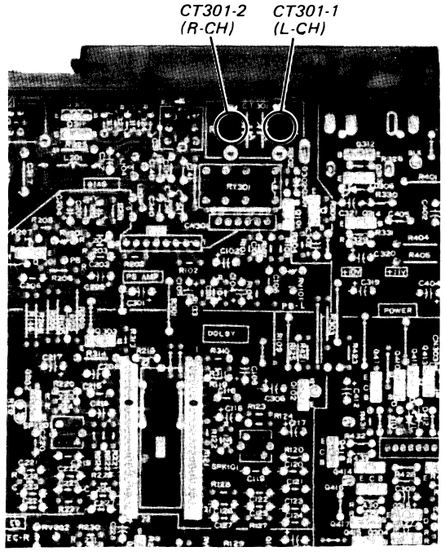
2. Mode: playback



Confirm that the 10 kHz playback output is 0 dB relative to the 315 Hz output. If necessary, adjust CT301-1 (L-CH), CT301-2 (R-CH) and repeat the steps given above.

3. After the adjustment, disconnect pattern.

Adjustment Location: audio board



Record Level Adjustment

Setting:

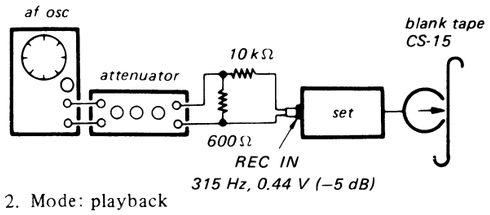
ATTENUATOR: standard record
(See page TC-15.)

Connect pattern as shown in Fig. 1.

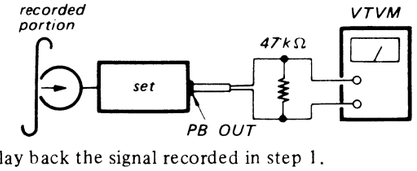
Procedure:

See page TC-15 for locations of REC IN and PB OUT.

1. Mode: record



2. Mode: playback

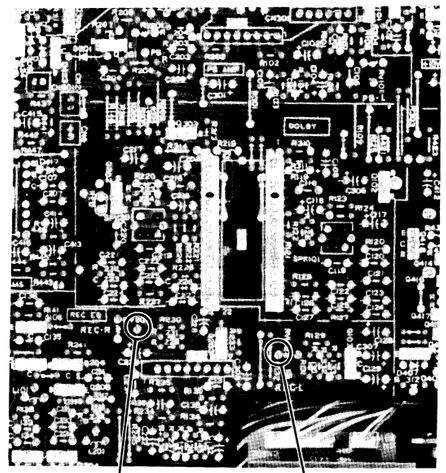


3. Play back the signal recorded in step 1.
Confirm that the signal level is within the specification below. If necessary, adjust RV102 (L-CH), RV202 (R-CH) and repeat the steps 1 – 3.

Specification:

PB OUT level: 0.41 to 0.46 V
(–5.5 to –4.5 dB)

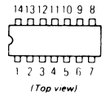
4. After the adjustment, disconnect pattern.



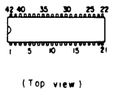
• Semiconductor Lead Layouts

LA3160

LA3220

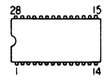


CX20187



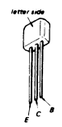
NJM4558S

TC9312N-001

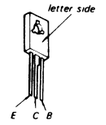


CX10034

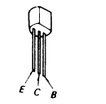
2SA1175
2SD1020



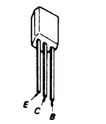
2SB548-R
2SD809-K



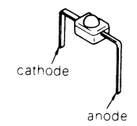
2SB1013
2SD1387



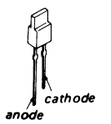
2SC2603-F
DTA114ES
DTA144ES
DTC144ES



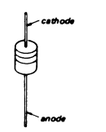
GL-1EG102
GL-1HY102
GL-1PR102



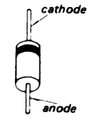
GL-8PG1



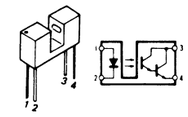
1SS202-1



HZ11A1L
HZ11B2L
HZ6B1L



SPI201-20



Note: Before performing Record Bias/Record Level Adjustment, connect pattern.

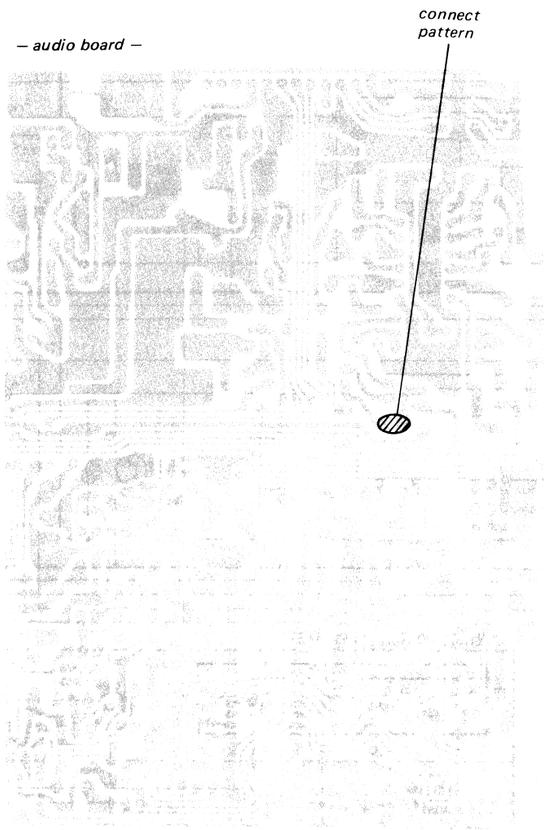


Fig. 1 Connecting Portion at the Adjustment

Record Bias Adjustment

Setting:

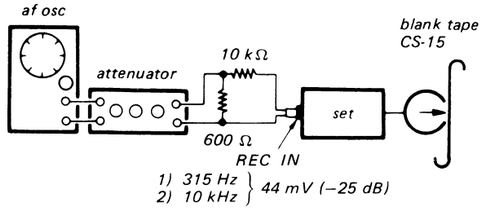
ATTENUATOR: standard record
(See page TC-15.)

Connect pattern as shown in Fig. 1.

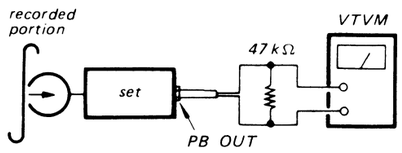
Procedure:

See page TC-15 for locations of REC IN and PB OUT.

1. Mode: record



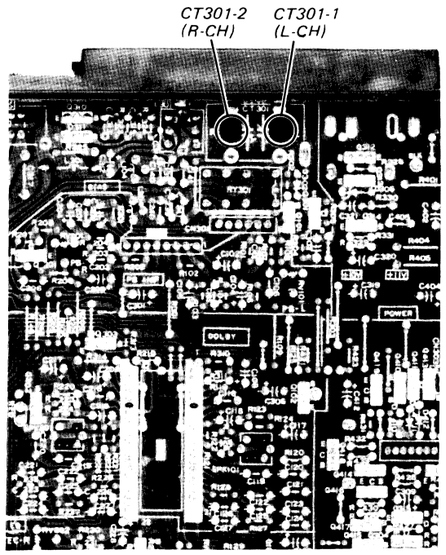
2. Mode: playback



Confirm that the 10 kHz playback output is 0 dB relative to the 315 Hz output. If necessary, adjust CT301-1 (L-CH), CT301-2 (R-CH) and repeat the steps given above.

3. After the adjustment, disconnect pattern.

Adjustment Location: audio board



Record Level Adjustment

Setting:

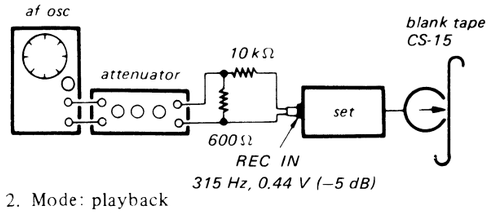
ATTENUATOR: standard record
(See page TC-15.)

Connect pattern as shown in Fig. 1.

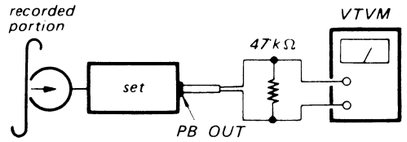
Procedure:

See page TC-15 for locations of REC IN and PB OUT.

1. Mode: record



2. Mode: playback

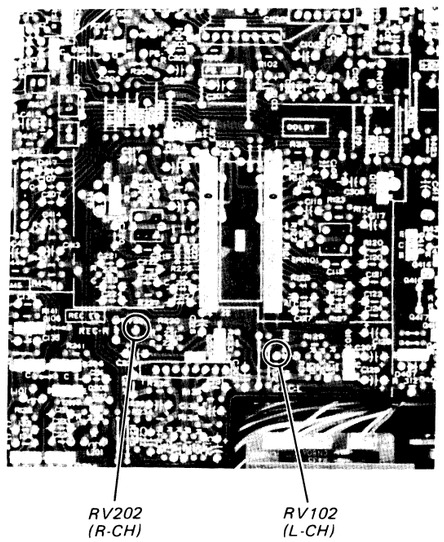


3. Play back the signal recorded in step 1. Confirm that the signal level is within the specification below. If necessary, adjust RV102 (L-CH), RV202 (R-CH) and repeat the steps 1 – 3.

Specification:

PB OUT level: 0.41 to 0.46 V
(–5.5 to –4.5 dB)

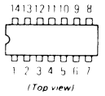
4. After the adjustment, disconnect pattern.



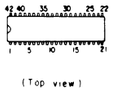
• Semiconductor Lead Layouts

LA3160

LA3220

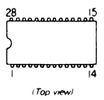


CX20187



NJM4558S

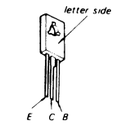
TC9312N-001



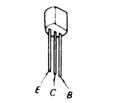
CX10034

2SA1175
2SD1020

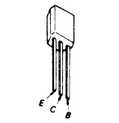
2SB548-R
2SD809-K



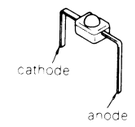
2SB1013
2SD1387



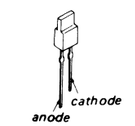
2SC2603-F
DTA114ES
DTA144ES
DTC144ES



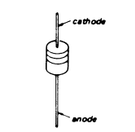
GL-1EG102
GL-1HY102
GL-1PR102



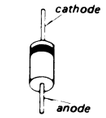
GL-8PG1



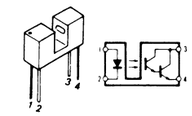
1SS202-1



HZ11A1L
HZ11B2L
HZ6B1L



SPI201-20

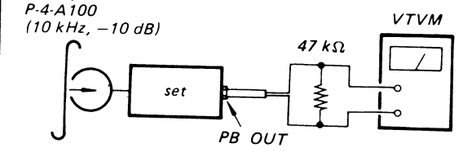


Record/playback Head Azimuth Adjustment

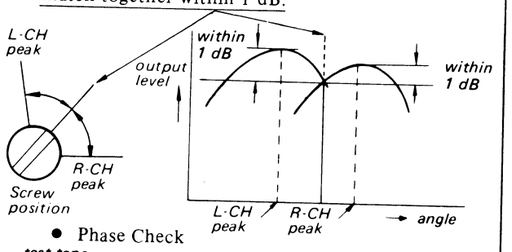
Procedure:

See page TC-15 for locations of REC IN and PB OUT.

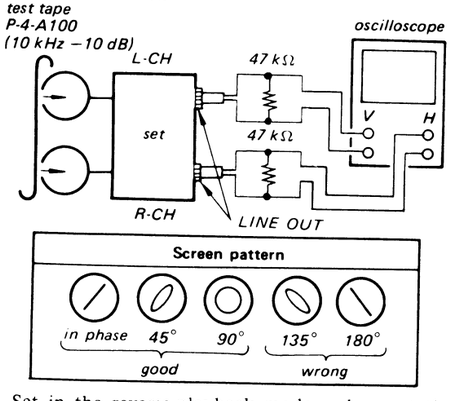
1. Mode: forward-playback



2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screws until both of output levels match together within 1 dB.



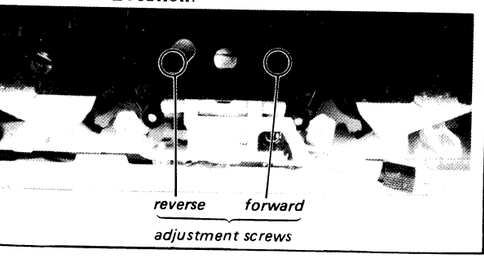
● Phase Check



3. Set in the reverse-playback mode and repeat the steps 1 – 2.

4. After the adjustment, lock the screws with locking compound.

Adjustment Location:

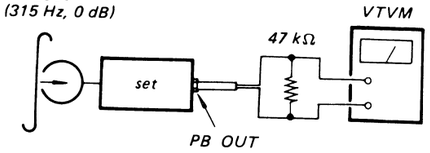


Playback Level Adjustment

Procedure:

See page TC-15 for locations of REC IN and PB OUT.

Mode: playback



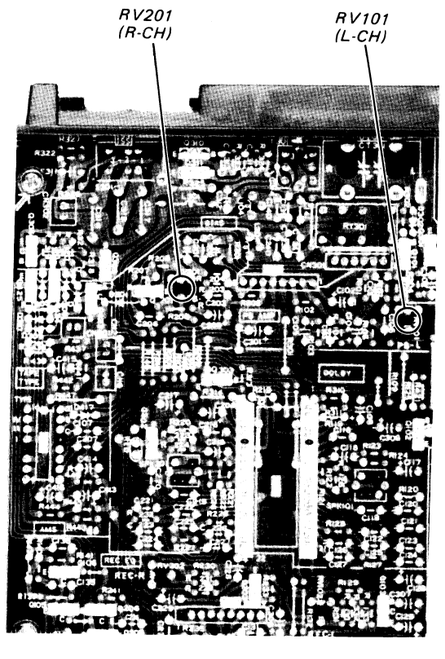
Adjust the RV101 (L-CH) and RV201 (R-CH) so that the specification is met.

Specification:

PB OUT level: 0.41 to 0.46 V
(−5.5 to −4.5 dB)
Level difference between channels:
less than 0.5 dB

Check that the PB OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: audio board



Note: Before performing Record Bias/Record Level Adjustment, connect pattern.

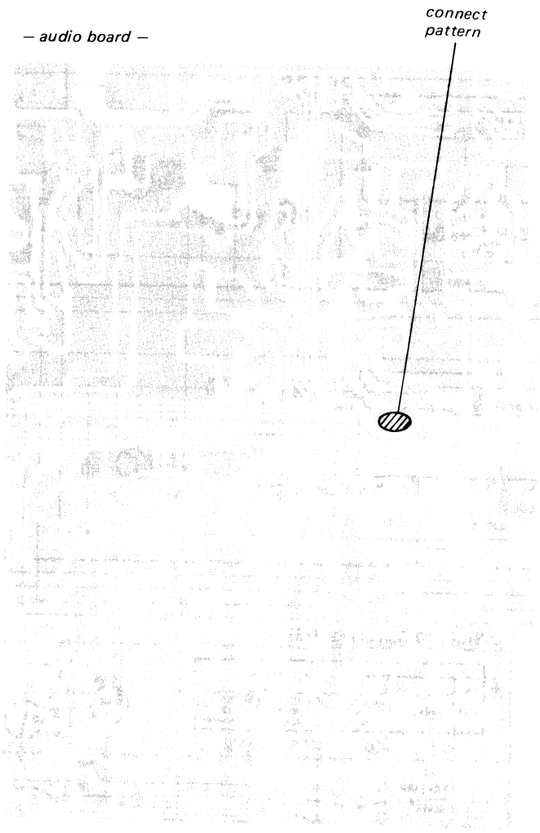


Fig. 1 Connecting Portion at the Adjustment

Record Bias Adjustment

Setting:

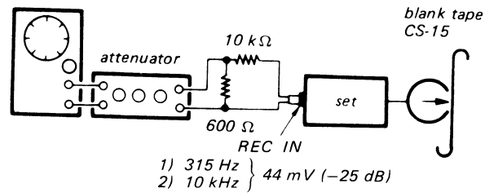
ATTENUATOR: standard record
(See page TC-15.)

Connect pattern as shown in Fig. 1.

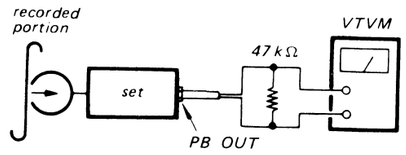
Procedure:

See page TC-15 for locations of REC IN and PB OUT.

1. Mode: record



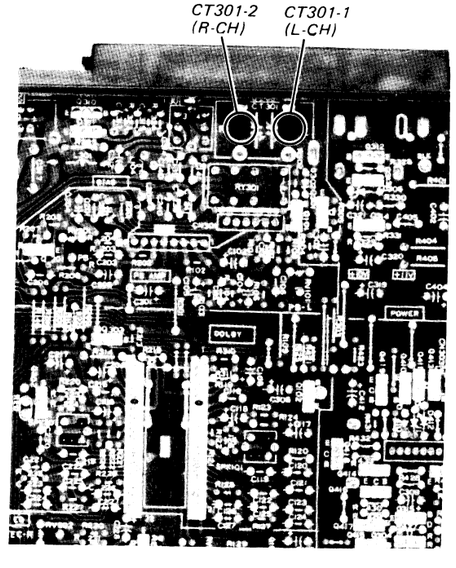
2. Mode: playback



Confirm that the 10 kHz playback output is 0 dB relative to the 315 Hz output. If necessary, adjust CT301-1 (L-CH), CT301-2 (R-CH) and repeat the steps given above.

3. After the adjustment, disconnect pattern.

Adjustment Location: audio board



Record Level Adjustment

Setting:

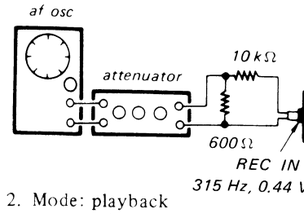
ATTENUATOR: standard re
(See page T

Connect pattern as shown in F

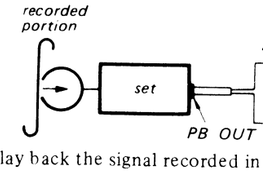
Procedure:

See page TC-15 for locations
OUT.

1. Mode: record



2. Mode: playback

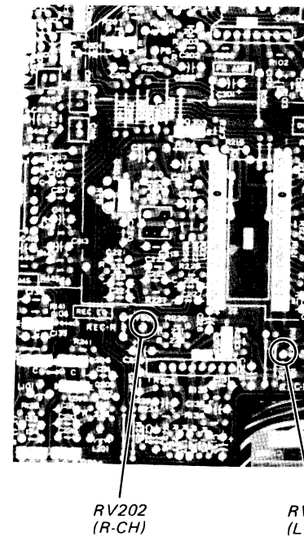


3. Play back the signal recorded in
Confirm that the signal level is
cation below. If necessary, adj
RV202 (R-CH) and repeat the s

Specification:

PB OUT level: 0.41 to 0.46 V
(−5.5 to −4.5 d

4. After the adjustment, disconnec



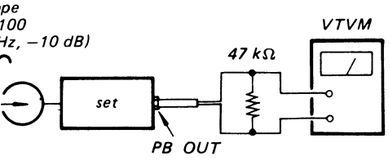
d/playback Head Azimuth Adjustment

dure:

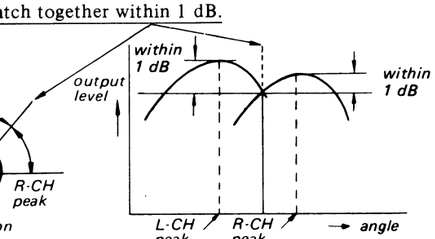
e page TC-15 for locations of REC IN and PB UT.

ode: forward-playback

pe
100
Hz, −10 dB)

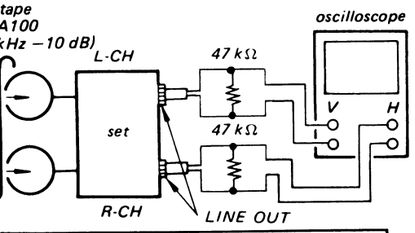


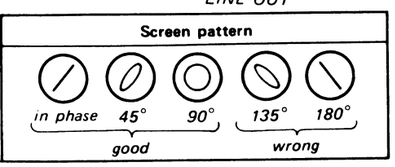
rn the adjustment screw for the maximum out- t levels. If these levels do not match, turn the justment screws until both of output levels tch together within 1 dB.



• Phase Check

tape
A100
kHz −10 dB)

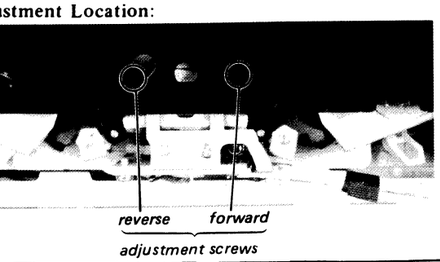




et in the reverse-playback mode and repeat the eps 1 – 2.

fter the adjustment, lock the screws with locking mpound.

stment Location:

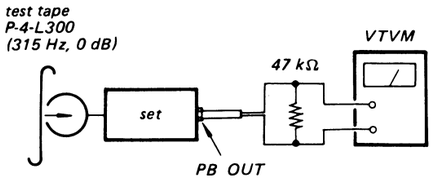


Playback Level Adjustment

Procedure:

See page TC-15 for locations of REC IN and PB OUT.

Mode: playback



Adjust the RV101 (L-CH) and RV201 (R-CH) so that the specification is met.

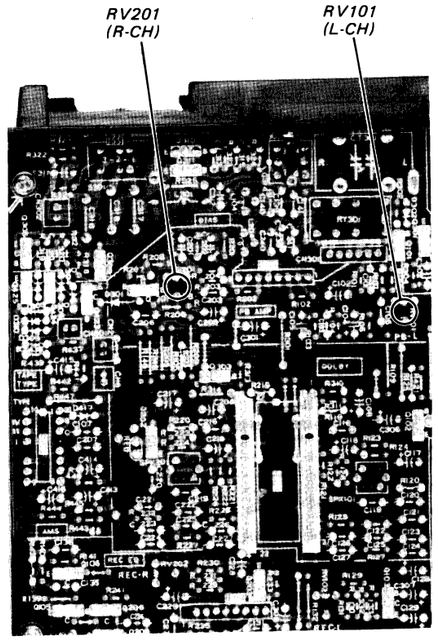
Specification:

PB OUT level: 0.41 to 0.46 V
(−5.5 to −4.5 dB)

Level difference between channels:
less than 0.5 dB

Check that the PB OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: audio board



Note: Before performing Record Bias/Record Level Adjustment, connect pattern.

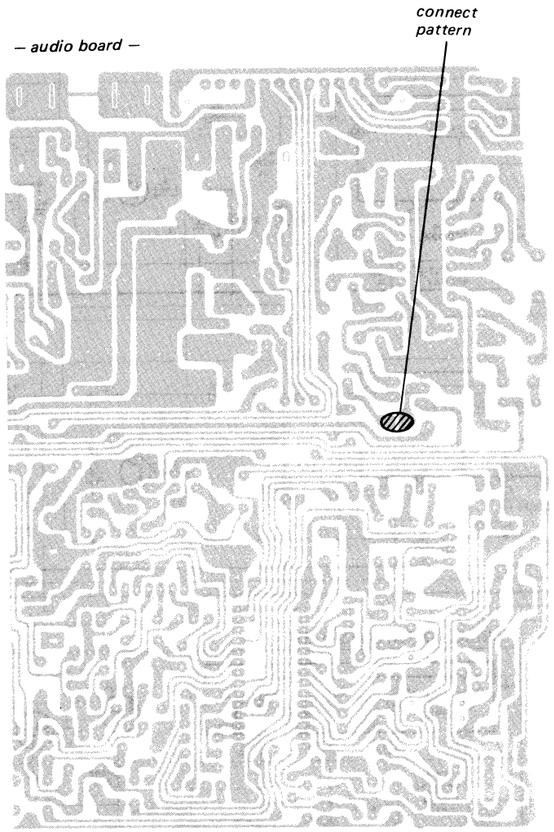


Fig. 1 Connecting Portion at the Adjustment

Record Bias Adjustment

Setting:

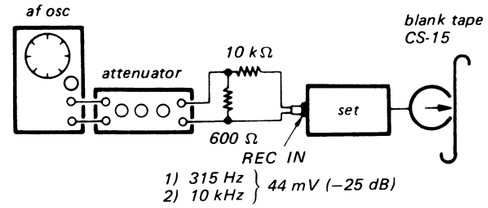
ATTENUATOR: standard record
(See page TC-15.)

Connect pattern as shown in Fig. 1.

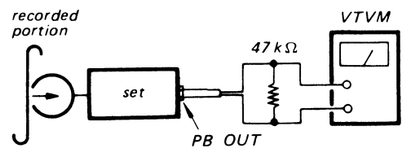
Procedure:

See page TC-15 for locations of REC IN and PB OUT.

1. Mode: record



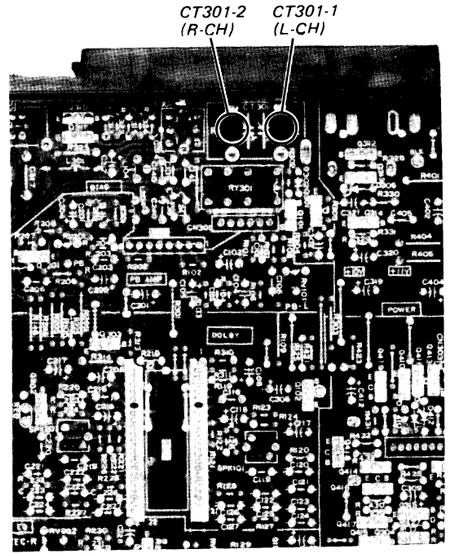
2. Mode: playback



Confirm that the 10 kHz playback output is 0 dB relative to the 315 Hz output. If necessary, adjust CT301-1 (L-CH), CT301-2 (R-CH) and repeat the steps given above.

3. After the adjustment, disconnect pattern.

Adjustment Location: audio board



Record Level Adjustment

Setting:

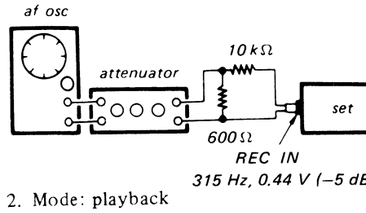
ATTENUATOR: standard record
(See page TC-15.)

Connect pattern as shown in Fig. 1.

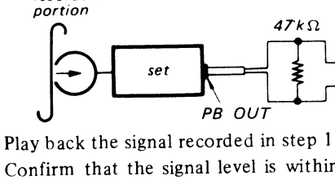
Procedure:

See page TC-15 for locations of REC IN and PB OUT.

1. Mode: record



2. Mode: playback

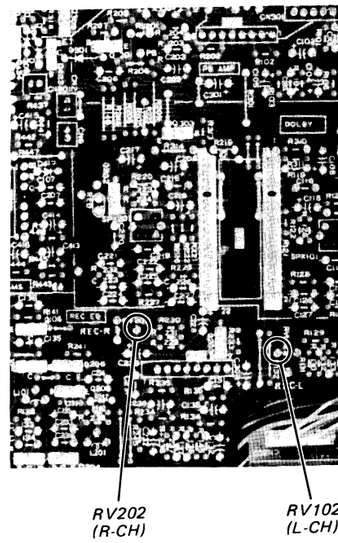


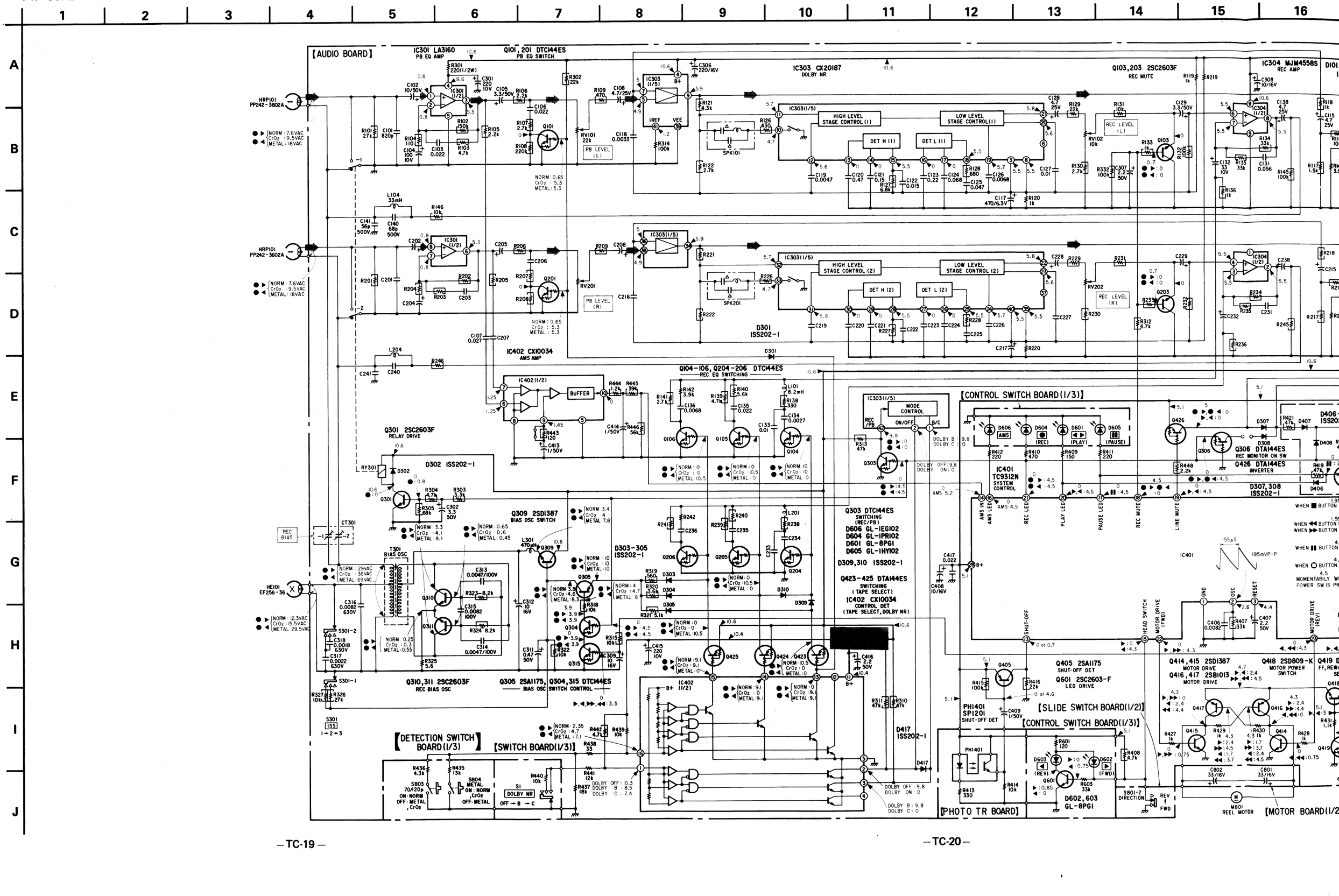
3. Play back the signal recorded in step 1 Confirm that the signal level is within cation below. If necessary, adjust RV RV202 (R-CH) and repeat the steps 1

Specification:

PB OUT level: 0.41 to 0.46 V
(−5.5 to −4.5 dB)

4. After the adjustment, disconnect patt




【AUDIO BOARD】
IC301 LA3160
PB EQ AMP
Q101, 201 DTC144ES
PB EQ SWITCH
IC303 CX20187
DOLBY NR
Q103,203 2SC2603F
REC MUTE
IC304 MJM4558S
REC AMP
IC303(1/5)
HIGH LEVEL STAGE CONTROL (1)
LOW LEVEL STAGE CONTROL (1)
HIGH LEVEL STAGE CONTROL (2)
LOW LEVEL STAGE CONTROL (2)
DET H (1)
DET L (1)
DET H (2)
DET L (2)
REC LEVEL (L)
REC LEVEL (R)
PB LEVEL (L)
PB LEVEL (R)
D301 ISS202-1
IC402 CX10034
AMS AMP
Q104-106, Q204-206 DTC144ES
REC EQ SWITCHING
IC402 (1/2)
BUFFER
Q301 2SC2603F
RELAY DRIVE
D302 ISS202-1
Q309 2SD1387
BIAS OSC SWITCH
D303-305 ISS202-1
Q310,311 2SC2603F
REC BIAS OSC
Q305 2SA1175, Q304,315 DTC144ES
BIAS OSC SWITCH CONTROL
【DETECTION SWITCH BOARD (1/3)】
【SWITCH BOARD(1/3)】
Q303 DTC144ES
SWITCHING (REC/PB)
D606 GL-1EG102
D604 GL-1PR102
D601 GL-8PG1
D605 GL-1HY102
D309,310 ISS202-1
Q423-425 DTA144ES
SWITCHING (TAPE SELECT)
IC402 CX10034
CONTROL DET (TAPE SELECT, DOLBY NR)
D417 ISS202-1
【CONTROL SWITCH BOARD(1/3)】
【SLIDE SWITCH BOARD(1/2)】
【CONTROL SWITCH BOARD(1/3)】
【PHOTO TR BOARD】
【MOTOR BOARD(1/2
IC401 TC9312N SYSTEM CONTROL
Q405 2SA1175
SHUT-OFF DET
Q601 2SC2603-F
LED DRIVE
Q414,415 2SD1387
MOTOR DRIVE
Q416,417 2SB1013
MOTOR DRIVE
Q418 2SD809-K
MOTOR POWER SWITCH
Q306 DTA144ES
REC MONITOR ON SW
Q426 DTA144ES
INVERTER
D307,308 ISS202-1
D602,603 GL-8PG1
M801 REEL MOTOR
S801-2 DIRECTION
HRP101 PP242-3602A
HE101 EF256-36
T301 BIAS OSC
L104 33mH
L204
L301 470μH
L101 8.2mH
L201
CT301
REC BIAS
S301 1SS
S301-1
S301-2
S803 70/120μ ON: NORM OFF: METAL, CrO2
S804 METAL ON: NORM, CrO2 OFF: METAL
S1 DOLBY NR OFF — B — C
DOLBY OFF: 9.8 DOLBY ON: 0
DOLBY B: 9.8 DOLBY C: 0
DOLBY OFF: 10.3 DOLBY B: 8.5 DOLBY C: 7.4
NORM: 7.6VAC CrO2: 9.5VAC METAL: 18VAC
NORM: 12.3VAC CrO2: 15.5VAC METAL: 29.5VAC
NORM: 29VAC CrO2: 36VAC METAL: 69VAC
NORM: 0.65 CrO2: 5.3 METAL: 5.3
55μS
195mVP-P

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

IC303 CX20187
DOLBY NR

IC303(1/5)
HIGH LEVEL STAGE CONTROL (1)
LOW LEVEL STAGE CONTROL (1)
DET H (1)
DET L (1)
REC LEVEL (L)
RV102 10k
Q103 2SC2603F
REC MUTE
IC304 MJM4558S
REC AMP
IC304 (1/2)
D101,102,201,202
ISS202-1
IC302 LA3220
AGC AMP
IC302 (1/2)
Q102,202 2SD1020
LINE MUTE
Q302 2SC2603F
AGC MUTE
Q102
Q202

IC303(1/5)
HIGH LEVEL STAGE CONTROL (2)
LOW LEVEL STAGE CONTROL (2)
DET H (2)
DET L (2)
REC LEVEL (R)
RV202
Q203
IC304 (1/2)
IC302 (1/2)
Q202
D301
ISS202-1

Q312 2SB548-R, Q313,314 2SC2603F
REG
D306 HZ11A1L
Q404 2SD809-K
REG
Q401 2SD809-K
REG
D402 HZ6B1L
D401 HZ11C2L

CN1
13 PB OUT(R
12 GND
11 PB OUT(L-
10 REC IN
9 REC IN
8 TC STOP
7 TC FUNC
6 SIRCS (TC
5 GND
4 B+ IN
3
2
1

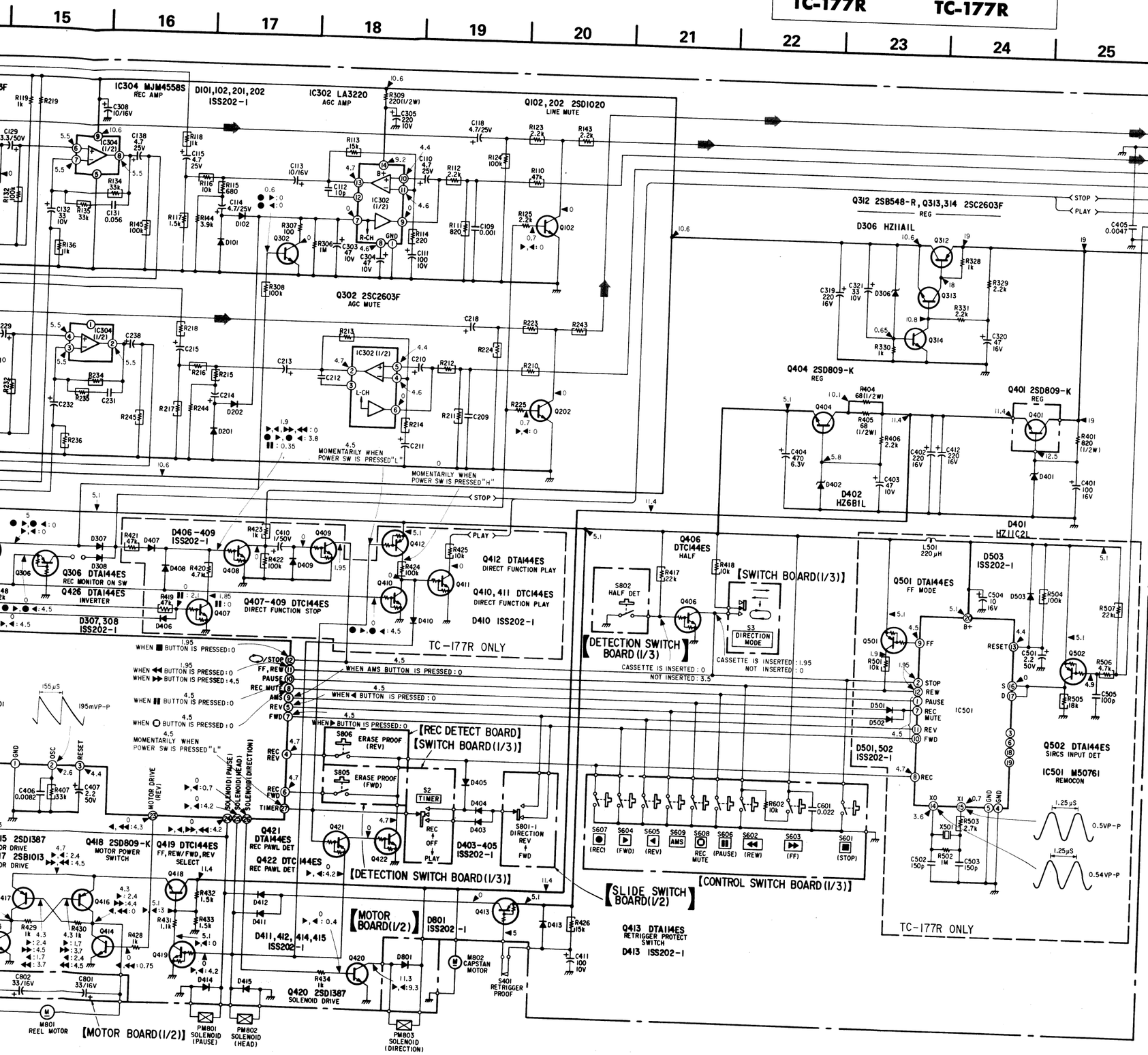
STOP
PLAY

D306 DTC144ES
HING

【CONTROL SWITCH BOARD(1/3)】

IC303(1/5)
MODE CONTROL
REC /PB
ON/OFF
B/C
Q303
Q303 DTC144ES
SWITCHING (REC/PB)
D606 GL-1EG102
D604 GL-1PR102
D601 GL-8PG1
D605 GL-1HY102
D309,310 ISS202-1
Q423-425 DTA144ES
SWITCHING (TAPE SELECT)
IC402 CX10034
CONTROL DET (TAPE SELECT, DOLBY NR)
D606 (AMS)
D604 (REC)
D601 (PLAY)
D605 (PAUSE)
IC401
TC9312N
SYSTEM CONTROL
AMS IN
AMS LED
REC LED
PLAY LED
PAUSE LED
REC MUTE
LINE MUTE
Q426 DTA144ES
INVERTER
Q306 DTA144ES
REC MONITOR ON SW
D406-409 ISS202-1
D307,308 ISS202-1
Q407-409 DTC144ES
DIRECT FUNCTION STOP
Q412 DTA144ES
DIRECT FUNCTION PLAY
Q410,411 DTC144ES
DIRECT FUNCTION PLAY
D410 ISS202-1
TC-177R ONLY
WHEN ■ BUTTON IS PRESSED: 0
WHEN ◀◀ BUTTON IS PRESSED: 0
WHEN ▶▶ BUTTON IS PRESSED: 4.5
WHEN ▮▮ BUTTON IS PRESSED: 0
WHEN ○ BUTTON IS PRESSED: 0
MOMENTARILY WHEN POWER SW IS PRESSED "L"
MOMENTARILY WHEN POWER SW IS PRESSED "H"
WHEN AMS BUTTON IS PRESSED: 0
WHEN ◀ BUTTON IS PRESSED: 0
WHEN ▶ BUTTON IS PRESSED: 0
STOP
FF, REW
PAUSE
REC MUTE
AMS
REV
FWD
REC REV
REC FWD
TIMER
SHUT-OFF
HEAD SWITCH
MOTOR DRIVE (FWD)
MOTOR DRIVE (REV)
SOLENOID (PAUSE)
SOLENOID (HEAD)
SOLENOID (DIRECTION)
GND
OSC
RESET
IC401
155μS
195mVP-P
【REC DETECT BOARD】
【SWITCH BOARD(1/3)】
S806 ERASE PROOF (REV)
S805 ERASE PROOF (FWD)
S2 TIMER
REC OFF PLAY
S801-1 DIRECTION REV FWD
【DETECTION SWITCH BOARD(1/3)】
【CONTROL SWITCH BOARD(1/3)】
S607 (REC)
S604 (FWD)
S605 (REV)
S609 AMS
S608 REC MUTE
S606 (PAUSE)
S602 (REW)
S603 (FF)
S601 (STOP)
Q421 DTA144ES
REC PAWL DET
Q422 DTC144ES
REC PAWL DET
Q413 DTA114ES
RETRIGGER PROTECT SWITCH
D413 ISS202-1
【SLIDE SWITCH BOARD(1/2)】
【MOTOR BOARD(1/2)】
D801 ISS202-1
M802 CAPSTAN MOTOR
S401 RETRIGGER PROOF
Q406 DTC144ES
HALF
S802 HALF DET
【DETECTION SWITCH BOARD(1/3)】
S3 DIRECTION MODE
CASSETTE IS INSERTED: 1.95
NOT INSERTED: 0
CASSETTE IS INSERTED: 0
NOT INSERTED: 3.5
D503 ISS202-1
Q501 DTA114ES
FF MODE
IC501
Q502 DTA144ES
SIRCS INPUT DET
IC501 M50761
REMOCON
TC-177R ONLY

Q405 2SA1175
SHUT-OFF DET
Q601 2SC2603-F
LED DRIVE
PH1401
SP1201
SHUT-OFF DET
【SLIDE SWITCH BOARD(1/2)】
【CONTROL SWITCH BOARD(1/3)】
【PHOTO TR BOARD】
D602,603 GL-8PG1
S801-2 DIRECTION
Q414,415 2SD1387
MOTOR DRIVE
Q416,417 2SB1013
MOTOR DRIVE
Q418 2SD809-K
MOTOR POWER SWITCH
Q419 DTC144ES
FF, REW/FWD, REV SELECT
D411,412,414,415 ISS202-1
Q420 2SD1387
SOLENOID DRIVE
M801 REEL MOTOR
【MOTOR BOARD(1/2)】
PM801 SOLENOID (PAUSE)
PM802 SOLENOID (HEAD)
PM803 SOLENOID (DIRECTION)
DOLBY OFF: 9.8
DOLBY ON: 0
DOLBY B: 9.8
DOLBY C: 0
DOLBY B: 9.8
DOLBY C: 0
D417 ISS202-1



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- ▷ : signal path.
- Components for right channel have same values as for left channel. Reference numbers are coded from 200.
- ⌇ : fusible resistor.
- ▭ : printed resistor.
- ▬ : B+ bus.
- □ : adjustment for repair.
- AC voltage readings in the bias oscillator with a VTVM.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 kΩ/V).
- Voltage variations may be noted due to normal production tolerances.
- ▶ : FWD ◀ : REV
  ◀◀ : REW ● : REC
  ▮▮ : PAUSE No mark : STOP
  ●/◀ : REC REV
  ▶▶ : FF
  O : REC MUTE
  ●/▶ : REC FWD
- Waveforms are taken to ground under no-signal conditions with oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Switch

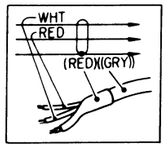
Ref. No.	Switch	Position
S1	DOLBY NR	OFF
S2	TIMER	OFF
S3	DIRECTION MODE	→←
S301	ISS	1
S401	RETRIGGER PROOF	OFF
S601	■ (STOP)	OFF
S602	◀◀ (REW)	OFF
S603	▶▶ (FF)	OFF
S604	▶ (FWD)	OFF
S605	◀ (REV)	OFF
S606	▮▮ (PAUSE)	OFF
S607	● (REC)	OFF
S608	O (REC MUTE)	OFF
S609	AMS	OFF
S801	DIRECTION	FWD
S802	HALF DET	OFF
S803	70/120 μ	OFF
S804	METAL	OFF
S805	ERASE PROOF (FWD)	OFF
S806	ERASE PROOF (REV)	OFF

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

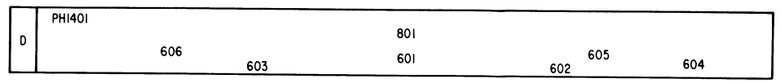
4-2. MOUNTING DIAGRAM

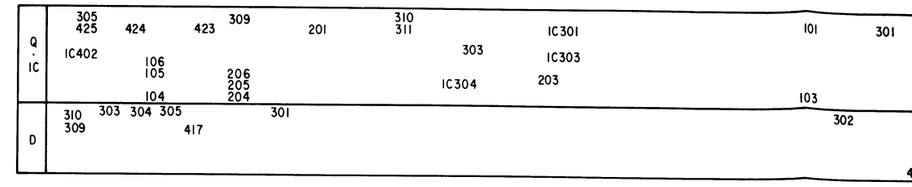
Note:

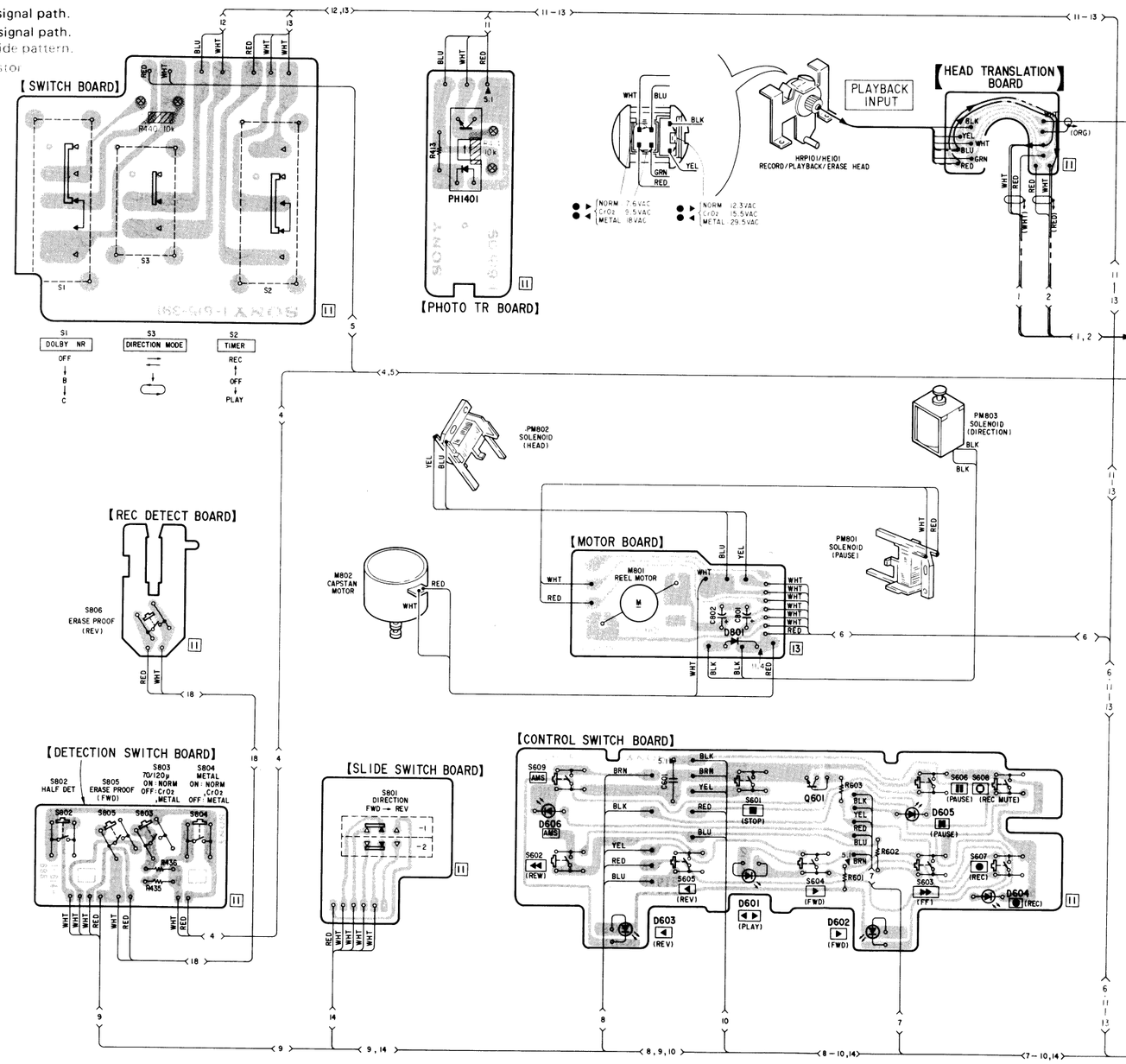
- Color code or sleeving over the end of the jacket.

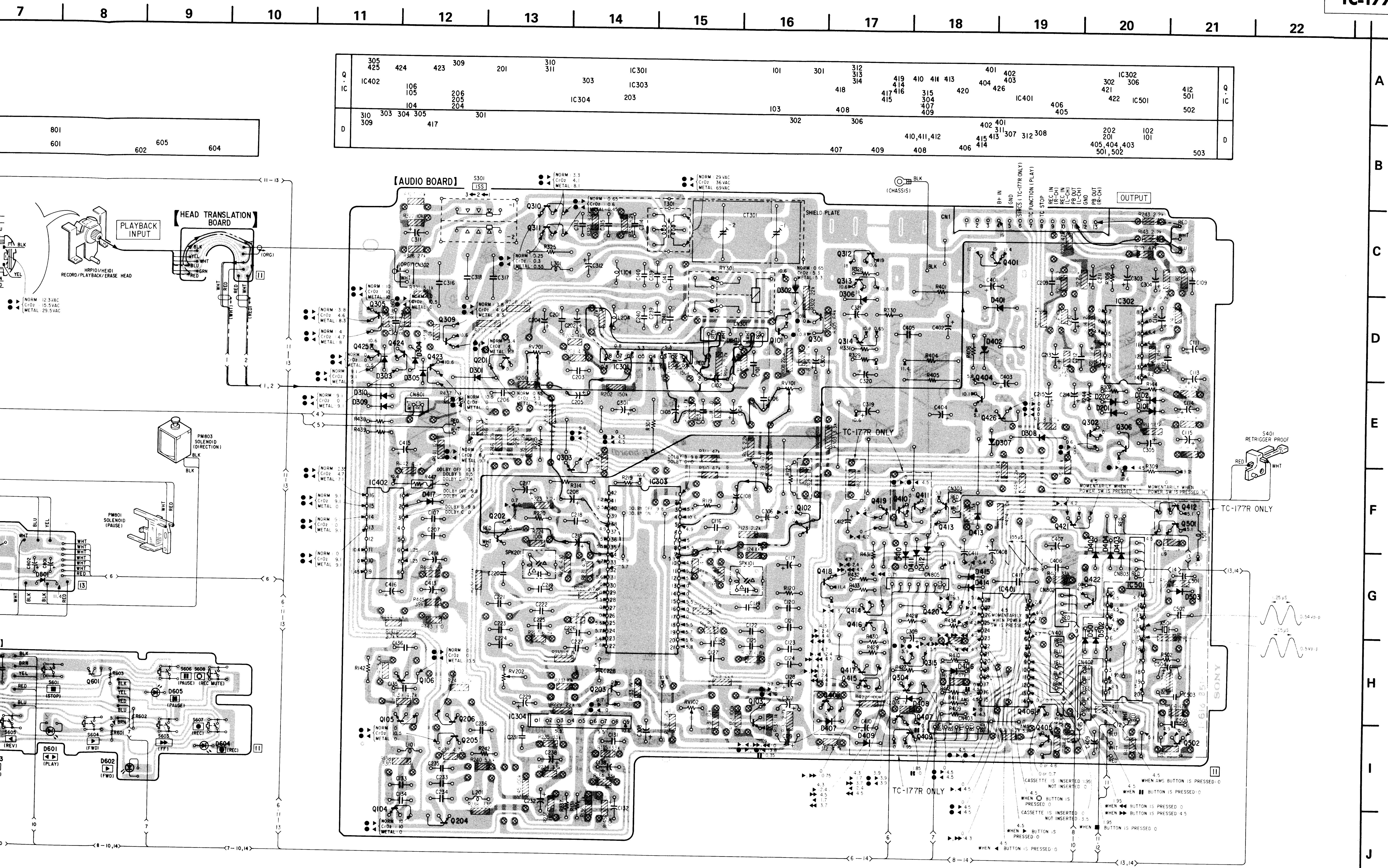


- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ▬▶▬ : signal path.
- ▬▶▬ : L-CH signal path.
- ▬▶▬ : R-CH signal path.
- ▒▒ : component side pattern.
- ▨ : Printed resistor








【AUDIO BOARD】
【HEAD TRANSLATION BOARD】
PLAYBACK INPUT
HRP101/HE101 RECORD/PLAYBACK/ERASE HEAD
PM803 SOLENOID (DIRECTION)
PM801 SOLENOID (PAUSE)
OUTPUT
CN1
B+ IN
GND
SIRCS (TC-177R ONLY)
TC FUNCTION (PLAY)
TC STOP
REC IN (R-CH)
REC IN (L-CH)
PB OUT (L-CH)
GND
PB OUT (R-CH)
SHIELD PLATE
(CHASSIS)
S401 RETRIGGER PROOF
TC-177R ONLY
MOMENTARILY WHEN POWER SW IS PRESSED "L"
MOMENTARILY WHEN POWER SW IS PRESSED "H"
WHEN AMS BUTTON IS PRESSED: 0
CASSETTE IS INSERTED: 1.95
NOT INSERTED: 0
SONY

SECTION 5
EXPLODED VIEWS AND PARTS LIST

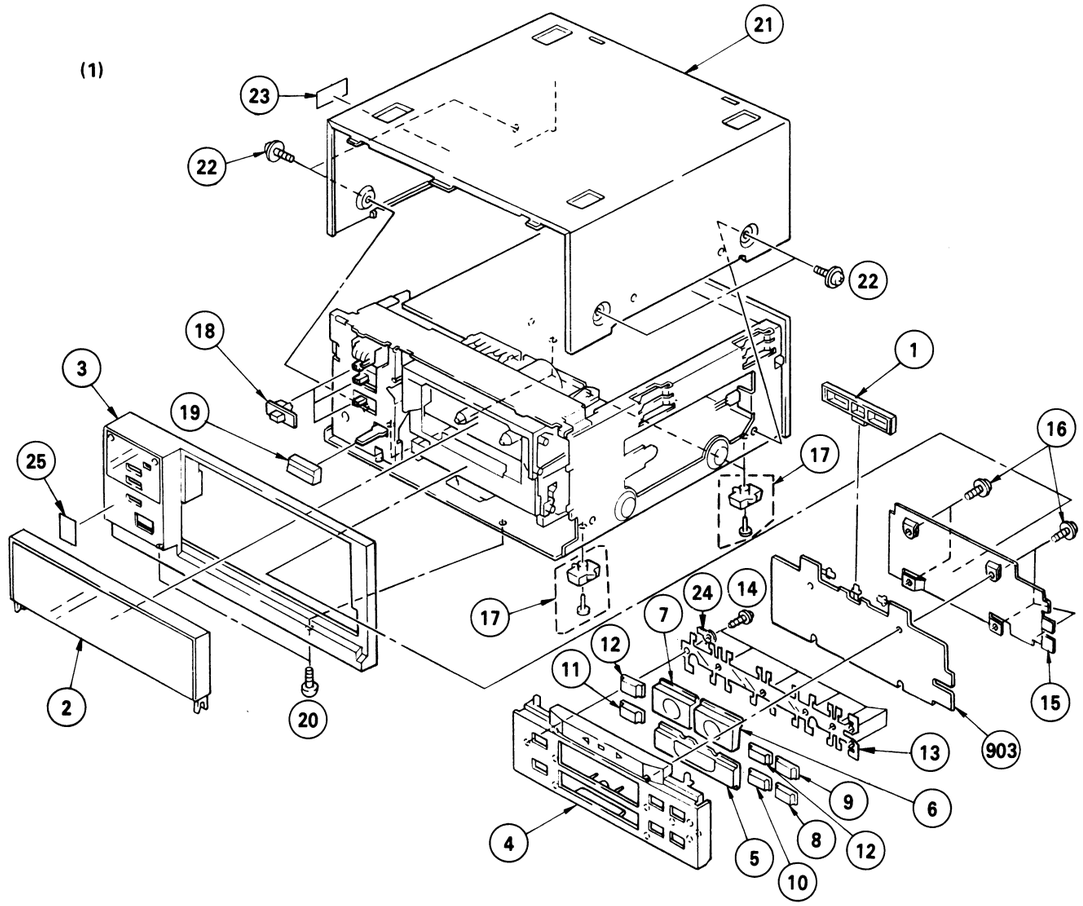
NOTE:
The mechanical parts with no reference number in the exploded views are not supplied.

· Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

· The construction parts of an assembled part are indicated with a collation number in the remark column.

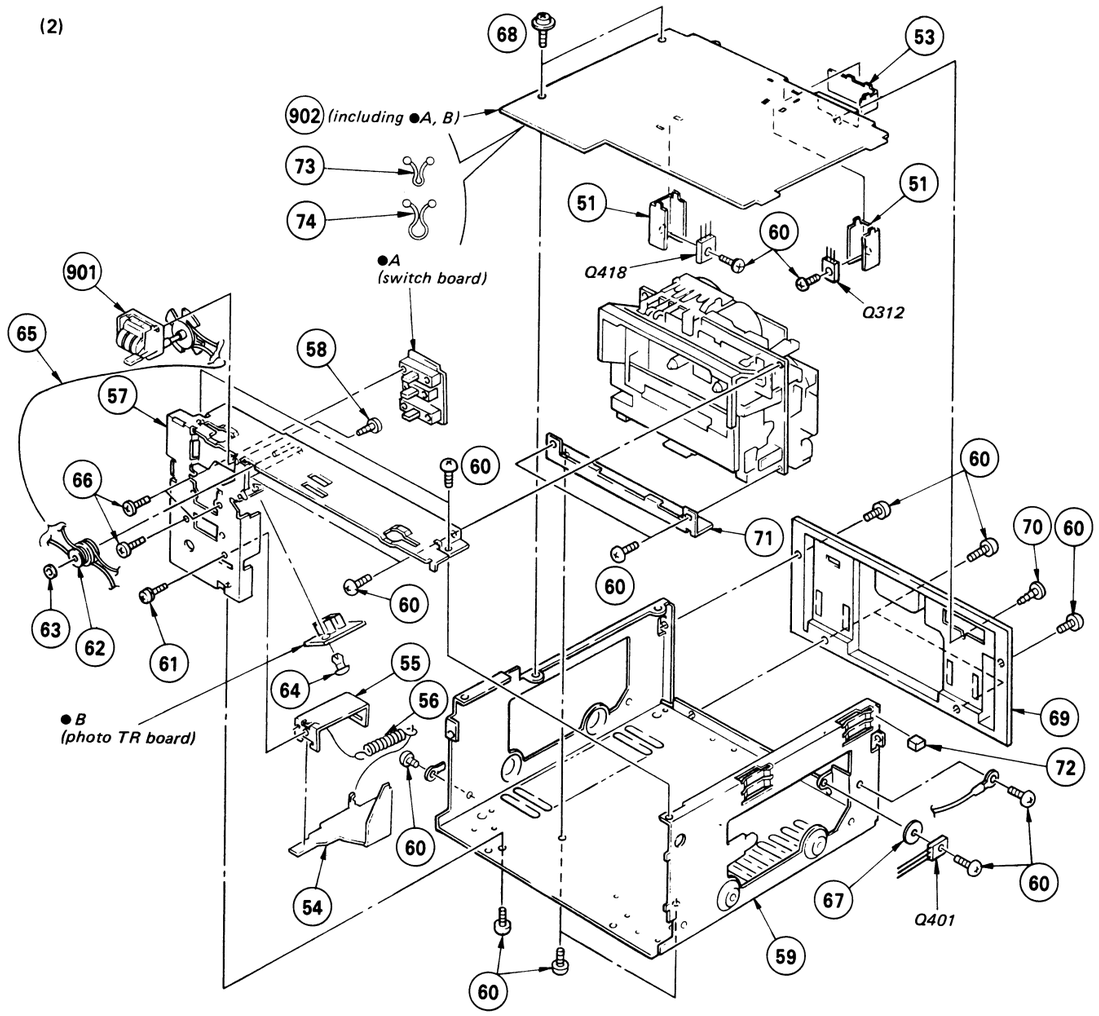
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

(1)



No.	Part No.	Description	Remarks
1	*3-325-508-01	HOUSE, LED	
2	X-3325-542-1	(E model).....WINDOW ASSY, CASSETTE	
	X-3325-543-1	(EXCEPT FOR E model)..WINDOW ASSY, CASSETTE	
3	X-3325-523-1	PANEL ASSY, FRONT	
4	X-3325-525-1	ESCUTCHEON ASSY	
5	3-325-506-01	BUTTON (B), STOP	
6	3-325-504-01	BUTTON (B), FWD	
7	3-325-505-01	BUTTON (B), REV	
8	3-325-503-31	BUTTON (B), REC MUTE	
9	3-325-503-11	BUTTON, REC	
10	3-325-503-21	BUTTON (B), PAUSE	
11	3-325-503-41	BUTTON, AMS	
12	3-325-503-01	BUTTON (B), FF.REW	
13	3-325-512-01	SPRING	
14	7-687-202-11	TOTSU, TAPPING PTPWH 2X4	
15	*3-325-511-01	PLATE, SHIELD	
16	7-687-233-11	SCREW, TOTSU PTPWH 2.6X6, TYPE2	
17	X-4902-937-1	FOOT ASSY, RUBBER	
18	3-307-538-21	KNOB, SWITCH, TIMER	
19	3-575-533-31	BUTTON, EJECT	
20	7-685-871-01	SCREW +BVTT 3X6 (S)	
21	4-910-078-31	CASE	
22	4-886-821-01	SCREW, M3 CASE	
23	*3-325-581-01	LABEL, MODEL NUMBER (W)	
24	7-623-505-01	LUG, 2	
25	3-703-709-41	STICKER, SONY SYMBOL (15)	
903	*1-615-390-11	PC BOARD, CONTROL SWITCH	

(2)



No.	Part No.	Description	Remarks
51	*3-312-615-31	HEAT SINK	
53	*3-325-515-01	PLATE, SHIELD	
54	*3-325-513-01	SLIDER, EJECT	
55	*3-575-502-00	BRACKET, EJECT	
56	3-534-238-XX	SPRING, TENSION	
57	*X-3325-501-1	CHASSIS ASSY, JOINT	
58	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
59	*3-309-132-12	CHASSIS	
60	7-685-871-01	SCREW +BVTT 3X6 (S)	
61	7-628-254-05	SCREW +PS 2.6X5	
62	3-318-825-01	PULLEY, MIDWAY	
63	3-558-708-21	WASHER, STOPPER	
64	4-812-134-11	RIVET NYLON, 3.5	
65	3-325-509-01	BELT (A), SQUARE	
66	7-621-775-10	SCREW +B 2.6X4	
67	3-572-365-11	SHEET, INSULATING (A)	
68	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6	
69	3-309-129-71	PLATE, JACK	
70	7-685-647-14	SCREW +BVTP 3X10 TYPE2 N-S	
71	*3-319-722-01	BRACLET, MD	
72	9-911-841-XX	CUSHION	
73	*2-056-665-00	HOLDER, WIRE (PURCE LOCK 5 DIA)	
74	*2-056-666-00	PURSE LOCK (8 DIA.)	
901	1-548-563-91	COUNTER, TAPE (MIDDLE TYPE)	
902	*A-2056-296-A	MOUNTED PCB, AUDIO	
Q312	8-729-154-82	TRANSISTOR 2SB548-R	
Q401	8-729-180-92	TRANSISTOR 2SD809-K	
Q418	8-729-180-92	TRANSISTOR 2SD809-K	

(3)

No.	Par
201	7-6
202	3-5
203	3-3
204	3-3
205	3-3
206	3-3
207	3-3
208	3-3
209	3-3
210	3-3
211	X-3
212	3-3
213	3-3
214	3-5
215	*3-3
216	3-3
217	3-3
218	3-3
219	3-3
220	3-3
221	3-3
222	3-3
223	*3-3

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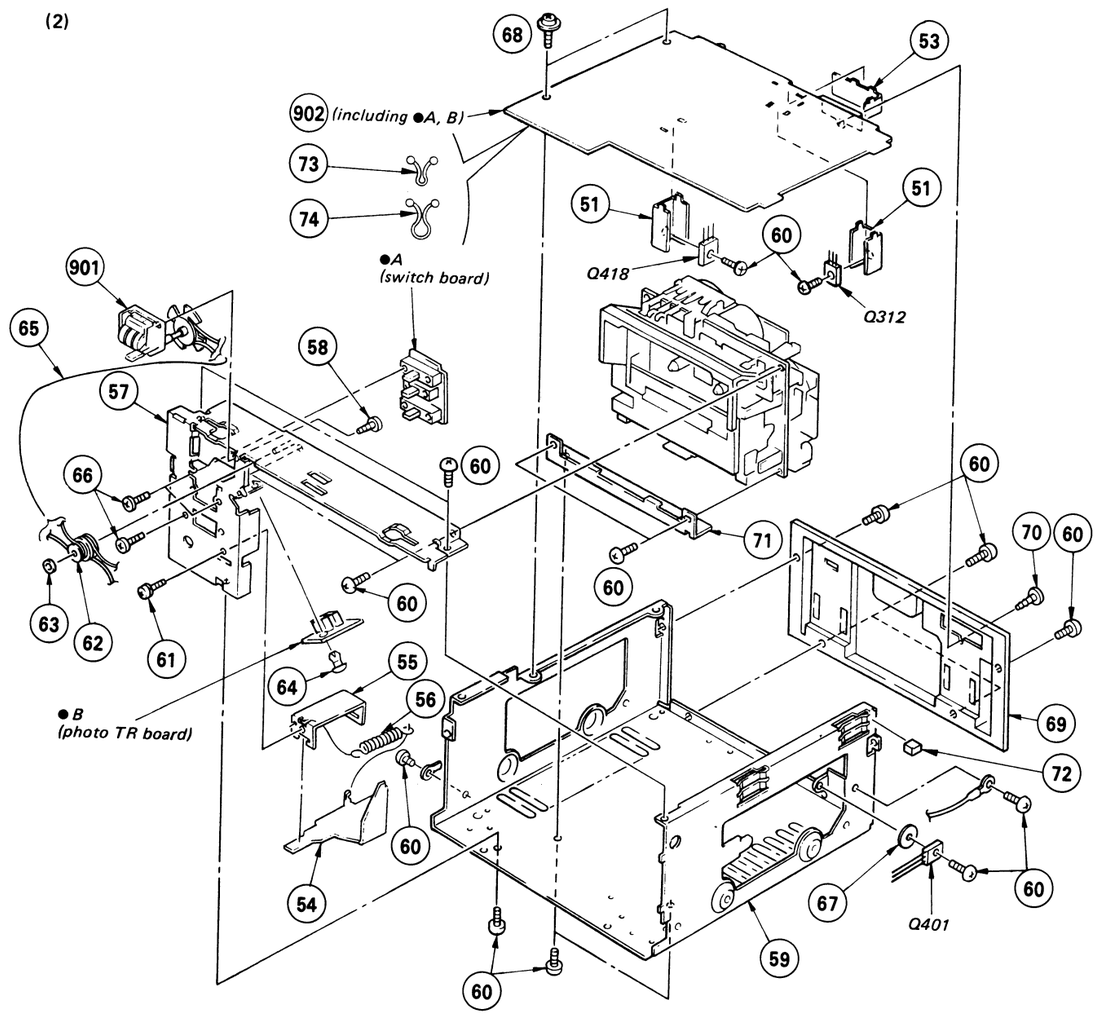
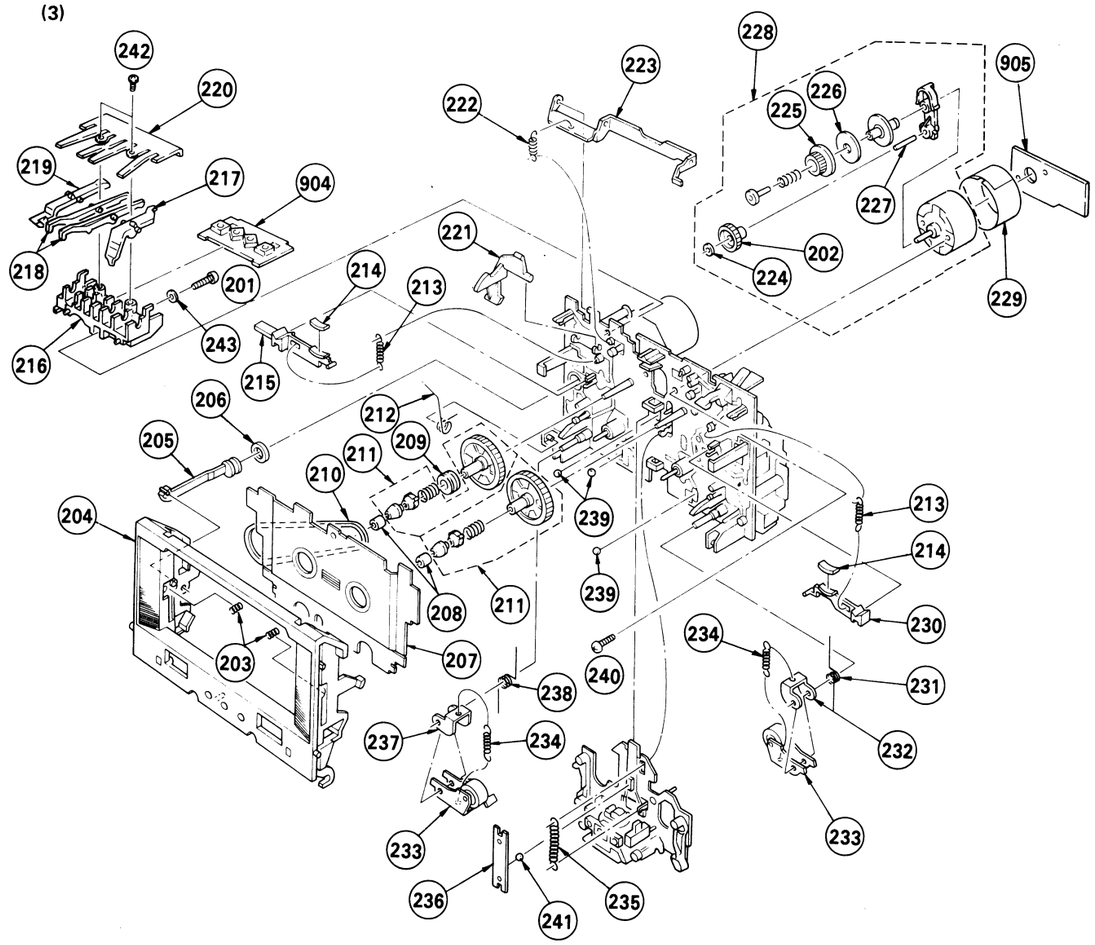
part

(2)



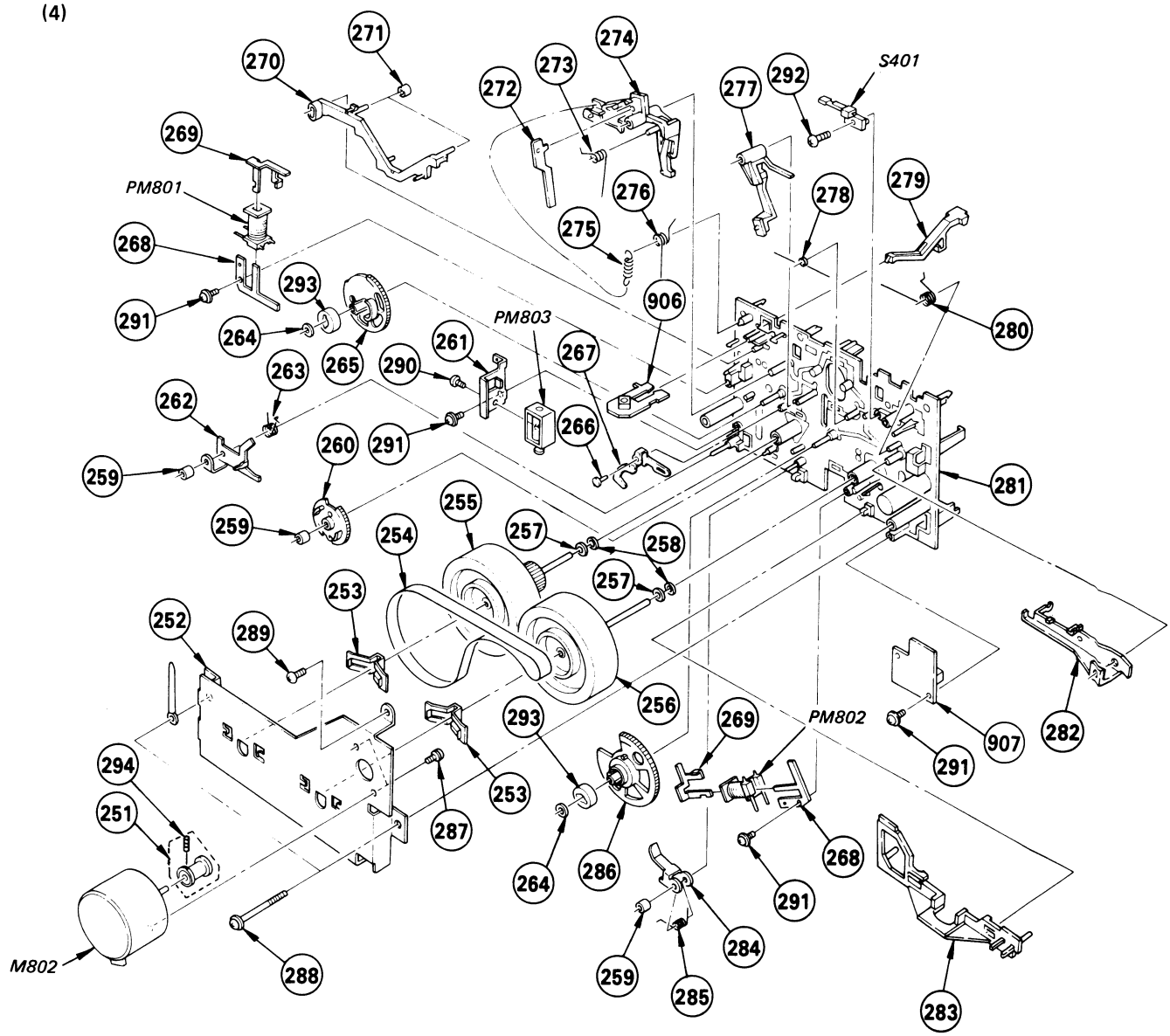
No.	Part No.	Description	Remarks
51	*3-312-615-31	HEAT SINK	
53	*3-325-515-01	PLATE, SHIELD	
54	*3-325-513-01	SLIDER, EJECT	
55	*3-575-502-00	BRACKET, EJECT	
56	3-534-238-XX	SPRING, TENSION	
57	*X-3325-501-1	CHASSIS ASSY, JOINT	
58	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
59	*3-309-132-12	CHASSIS	
60	7-685-871-01	SCREW +BVTT 3X6 (S)	
61	7-628-254-05	SCREW +PS 2.6X5	
62	3-318-825-01	PULLEY, MIDWAY	
63	3-558-708-21	WASHER, STOPPER	
64	4-812-134-11	RIVET NYLON, 3.5	
65	3-325-509-01	BELT (A), SQUARE	
66	7-621-775-10	SCREW +B 2.6X4	
67	3-572-365-11	SHEET, INSULATING (A)	
68	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6	
69	3-309-129-71	PLATE, JACK	
70	7-685-647-14	SCREW +BVTP 3X10 TYPE2 N-S	
71	*3-319-722-01	BRACLET, MD	
72	9-911-841-XX	CUSHION	
73	*2-056-665-00	HOLDER, WIRE (PURCE LOCK 5 DIA)	
74	*2-056-666-00	PURSE LOCK (8 DIA.)	
901	1-548-563-91	COUNTER, TAPE (MIDDLE TYPE)	
902	*A-2056-296-A	MOUNTED PCB, AUDIO	
Q312	8-729-154-82	TRANSISTOR 2SB548-R	
Q401	8-729-180-92	TRANSISTOR 2SD809-K	
Q418	8-729-180-92	TRANSISTOR 2SD809-K	

(3)



No.	Part No.	Description	Remarks
201	7-685-865-01	SCREW +BVTT 2.6X12 (S)	
202	3-575-332-00	GEAR, FR	
203	3-319-721-01	SPRING, COMPRESSION	
204	3-319-700-01	HOLDER, CASSETTE	
205	3-319-613-01	PISTON (B)	
206	3-312-441-00	RING, PISTON	
207	3-313-292-11	RETAINER, CASSETTE	
208	3-319-607-01	BUSHING, REEL TABLE	
209	3-319-657-01	PULLEY (B) CB	
210	3-325-510-01	BELT (B), SQUARE	
211	X-3319-617-1	PULLEY ASSY, MOTOR	
212	3-319-614-01	SPRING	
213	3-319-694-01	SPRING, TENSION	
214	3-575-346-01	FELT, BREKE	
215	*3-319-611-01	LEVER (LEFT), BACK TENSION	
216	3-319-670-01	HOLDER, SWITCH, DETECTION	
217	3-319-605-01	LEVER, METAL DETECTION	
218	3-319-603-01	LEVER, REC DETECTION	
219	3-319-604-01	LEVER, HALF DETECTION	
220	3-319-602-01	SPRING	
221	3-319-669-01	LEVER, EJECT	
222	3-312-432-00	SPRING, TENSION	
223	*3-319-678-01	LEVER, SWITCH LIFT	
224	3-307-394-00	RETAINER (B), THRUST	
225	3-575-324-00	GEAR, LIMITER	
226	3-564-027-11	FELT, LIMITER	
227	3-575-304-00	SHAFT, GEAR, FR	
228	X-3319-612-1	MOTOR ASSY, REEL	202, 224-227
229	3-575-457-00	PLATE (B), SHIELD, MOTOR	
230	*3-319-615-01	LEVER (RIGHT), BACK TENSION	
231	3-319-650-01	SPRING (R)	
232	*3-319-652-01	PLATE (RIGHT), LIMITER	
233	X-3319-607-1	PINCH LEVER ASSY	
234	3-319-686-01	SPRING, TENSION	
235	3-319-685-01	SPRING, TENSION	
236	3-319-601-01	SPRING	
237	*3-319-653-01	PLATE (LEFT), LIMITER	
238	3-319-651-01	SPRING (L)	
239	7-671-112-01	STEEL, BALL	
240	7-621-775-60	SCREW +B 2.6X12	
241	7-671-112-11	BALL, STEEL	
242	7-685-102-21	SCREW +PTP 2.6X4 TYPE2 SLIT	
243	7-688-002-01	W 2.6, SMALL	
904	*1-614-696-11	PC BOARD, DETECTION SW	
905	*1-613-522-11	PC BOARD, TRANSLATION	

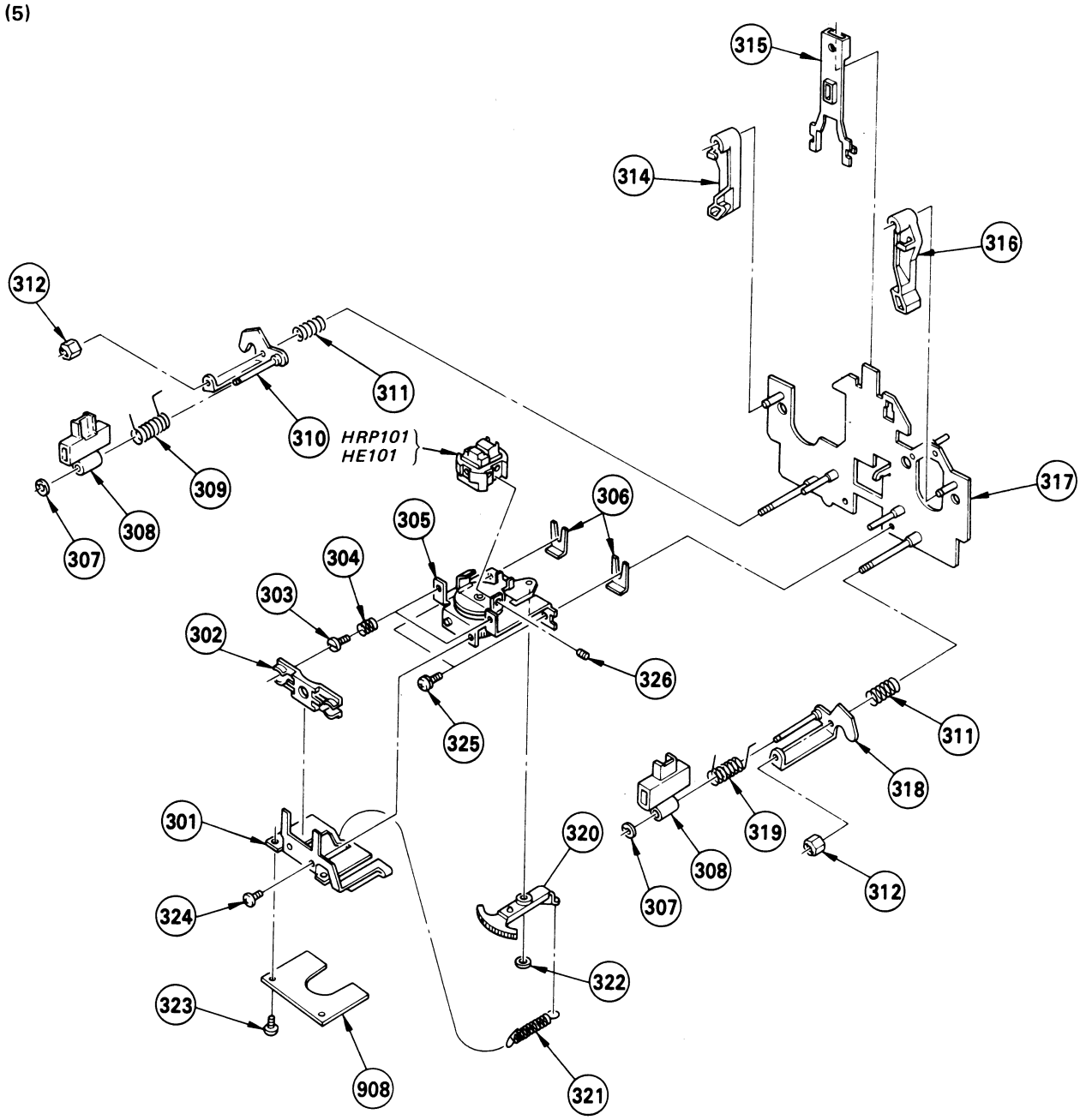
(4)



No.	Part No.	Description	REMARKS
251	X-3319-617-1	PULLEY ASSY, MOTOR	294
252	*3-319-665-01	RETAINER, THRUST	
253	3-319-608-01	RETAINER, THRUST	
254	3-319-630-01	BELT (R), CAPSTAN	
255	X-3319-606-1	FLYWHEEL (T) ASSY	
256	X-3319-601-1	FLYWHEEL ASSY	
257	3-701-438-11	WASHER, 2.5	
258	3-307-482-00	WASHER, LUMILER	
259	3-319-607-01	BUSHING, REEL TABLE	
260	3-319-674-01	GEAR, REVERSE CAM	
261	*3-319-639-01	BRACKET, TRIGGER PM	
262	*3-319-628-01	LEVER, REVERSE TRIGGER	
263	3-319-648-01	SPRING	
264	3-307-394-00	RETAINER (B), THRUST	
265	3-319-688-01	GEAR, PAUSE CAM	
266	*3-319-664-01	SHAFT, CONTROL LEVER	
267	*3-319-683-01	LEVER, CONTROL, TRIGGER	
268	3-307-332-00	ARBOR, FIXED	
269	3-307-333-00	ARBOR, TRIGGER	
270	*3-319-668-01	PLATE, BRAKE	
271	3-319-662-01	RUBBER, BRAKE	
272	3-319-612-01	SPRING	
273	3-319-606-01	SPRING	

No.	Part No.	Description	REMARKS
274	*X-3319-614-1	LEVER ASSY, PAUSE	
275	3-555-124-00	SPRING, TENSION	
276	3-319-637-01	SPRING (R)	
277	*X-3319-615-1	LEVER ASSY, FWD LOCK	
278	3-319-649-01	SPRING	
279	3-319-666-01	LEVER (RIGHT), REC DETECTION	
280	3-319-633-01	SPRING	
281	X-3319-611-1	CHASSIS ASSY, MECHANICAL	
282	*3-319-676-01	LEVER, FWD	
283	*3-319-681-01	SLIDER, REVERSE	
284	*3-319-658-01	LEVER, TRIGGER KICK	
285	3-319-660-01	SPRING	
286	3-319-689-01	GEAR, FWD CAM	
287	7-628-253-95	SCREW +PS 2.6X4	
288	7-685-879-01	SCREW +BVTT 3X30 (S)	
289	7-685-646-21	SCREW +BVTP 3X8 (S)	
290	7-685-850-01	SCREW +BVTT 2X3 (S)	
291	7-687-204-11	TOTSU PTPWH 2X6 NON-SLIT, TYPE2	
292	7-685-792-01	SCREW +PTT 2.6X5	
293	1-452-202-00	MAGNET	
294	7-621-733-08	SET-SCT, HEX 2X4 FLAT POINT	
906	*1-612-727-11	PC BOARD, REC DET	
907	*1-614-396-11	PC BOARD, SLIDE SW	

(5)



No.	Part No.	Description	REMARKS
301	3-319-620-01	PLATE, ORNAMENTAL, HEAD	
302	3-319-644-01	STOPPER	
303	3-319-663-01	SCREW, ADJUSTMENT, AZIMUTH	
304	3-307-460-00	SPRING, COMPRESSION	
305	X-3319-613-1	BRACKET COMPLETE ASSY, HEAD	
306	3-307-477-01	SEAM (A), HEAD ADJUSTMENT	
	3-307-477-11	SEAM (A), HEAD ADJUSTMENT	
	3-307-477-21	SEAM (A), HEAD ADJUSTMENT	
	3-307-477-31	SEAM (A), HEAD ADJUSTMENT	
	3-307-477-41	SEAM (A), HEAD ADJUSTMENT	
307	3-307-394-00	RETAINER (B), THRUST	
308	3-306-269-01	GUIDE, TAPE	
309	3-306-249-00	SPRING (LEFT)	
310	*X-3319-609-1	LEVER (LEFT) ASSY, GUIDE	
311	3-537-215-00	SPRING, COMPRESSION	

No.	Part No.	Description	REMARKS
312	3-319-638-01	NUT, ADJUSTMENT	
314	3-319-643-01	LEVER (L), P ROLLER SELECTION	
315	3-319-684-01	PROTECTOR, EDGE	
316	3-319-642-01	LEVER (R), P ROLLER SELECTION	
317	*X-3319-610-1	CHASSIS ASSY, REVERSE HEAD	
318	*X-3319-608-1	LEVER (RIGHT) ASSY, GUIDE	
319	3-306-250-00	SPRING (RIGHT)	
320	3-319-625-01	GEAR, ROTARY HEAD	
321	3-306-258-01	SPRING, TENSION	
322	7-624-102-04	STOP RING 1.5	
323	7-685-850-01	SCREW +BVTT 2X3 (S)	
324	7-627-553-17	SCREW, PRECISION +P 2X2	
325	7-628-253-05	SCREW +PS 2X4	
326	7-621-710-26	SET-SCREW, SLOT 2X3 FLAT POINT	
908	*1-612-729-11	PC BOARD, HEAD TRANSLATION	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	1-548-563-91	COUNTER, TAPE (MIDDLE TYPE)			
902	*A-2056-296-A	MOUNTED PCB, AUDIO			
903	*1-615-390-11	PC BOARD, CONTROL SWITCH			
904	*1-614-696-11	PC BOARD, DETECTION SW			
905	*1-613-522-11	PC BOARD, TRANSLATION			
906	*1-612-727-11	PC BOARD, REC DET			
907	*1-614-396-11	PC BOARD, SLIDE SW			
908	*1-612-729-11	PC BOARD, HEAD TRANSLATION			
C101	1-162-293-31	CERAMIC	820PF	10%	50V
C102	1-123-384-00	ELECT	10MF	20%	50V
C103	1-136-157-00	FILM	0.022MF	5%	50V
C104	1-123-307-00	ELECT	100MF	20%	10V
C105	1-123-613-00	ELECT	3.3MF	20%	50V
C106	1-136-157-00	FILM	0.022MF	5%	50V
C107	1-136-158-00	FILM	0.027MF	5%	50V
C108	1-123-369-00	ELECT	4.7MF	20%	25V
C109	1-162-294-31	CERAMIC	0.001MF	10%	50V
C110	1-123-369-00	ELECT	4.7MF	20%	25V
C111	1-123-328-00	ELECT	100MF	20%	10V
C112	1-162-199-31	CERAMIC	10PF	5%	50V
C113	1-123-356-00	ELECT	10MF	20%	16V
C114	1-123-369-00	ELECT	4.7MF	20%	25V
C115	1-123-369-00	ELECT	4.7MF	20%	25V
C116	1-110-201-00	MYLAR	0.0033MF	5%	50V
C117	1-123-298-00	ELECT	470MF	20%	6.3V
C118	1-123-369-00	ELECT	4.7MF	20%	25V
C119	1-110-203-00	MYLAR	0.0047MF	5%	50V
C120	1-136-173-00	FILM	0.47MF	5%	50V
C121	1-136-167-00	FILM	0.15MF	5%	50V
C122	1-136-155-00	FILM	0.015MF	5%	50V
C123	1-136-169-00	FILM	0.22MF	5%	50V
C124	1-136-163-00	FILM	0.068MF	5%	50V
C125	1-136-161-00	FILM	0.047MF	5%	50V
C126	1-110-205-00	MYLAR	0.0068MF	5%	50V
C127	1-136-153-00	FILM	0.01MF	5%	50V
C128	1-123-369-00	ELECT	4.7MF	20%	25V
C129	1-123-382-00	ELECT	3.3MF	20%	50V
C131	1-136-162-00	FILM	0.056MF	5%	50V
C132	1-123-318-00	ELECT	33MF	20%	10V
C133	1-136-153-00	FILM	0.01MF	5%	50V
C134	1-110-200-00	MYLAR	0.0027MF	5%	50V
C135	1-136-157-00	FILM	0.022MF	5%	50V
C136	1-110-205-00	MYLAR	0.0068MF	5%	50V
C138	1-123-369-00	ELECT	4.7MF	20%	25V
C140	1-136-272-00	FILM	68PF	5%	630V
C141	1-136-271-00	FILM	56PF	5%	630V
C201	1-162-293-31	CERAMIC	820PF	10%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C202	1-123-384-00	ELECT	10MF	20%	50V
C203	1-136-157-00	FILM	0.022MF	5%	50V
C204	1-123-307-00	ELECT	100MF	20%	10V
C205	1-123-613-00	ELECT	3.3MF	20%	50V
C206	1-136-157-00	FILM	0.022MF	5%	50V
C207	1-136-158-00	FILM	0.027MF	5%	50V
C208	1-123-369-00	ELECT	4.7MF	20%	25V
C209	1-162-294-31	CERAMIC	0.001MF	10%	50V
C210	1-123-369-00	ELECT	4.7MF	20%	25V
C211	1-123-307-00	ELECT	100MF	20%	10V
C212	1-162-199-31	CERAMIC	10PF	5%	50V
C213	1-123-356-00	ELECT	10MF	20%	16V
C214	1-123-369-00	ELECT	4.7MF	20%	25V
C215	1-123-369-00	ELECT	4.7MF	20%	25V
C216	1-110-201-00	MYLAR	0.0033MF	5%	50V
C217	1-123-298-00	ELECT	470MF	20%	6.3V
C218	1-123-369-00	ELECT	4.7MF	20%	25V
C219	1-110-203-00	MYLAR	0.0047MF	5%	50V
C220	1-136-173-00	FILM	0.47MF	5%	50V
C221	1-136-167-00	FILM	0.15MF	5%	50V
C222	1-136-155-00	FILM	0.015MF	5%	50V
C223	1-136-169-00	FILM	0.22MF	5%	50V
C224	1-136-163-00	FILM	0.068MF	5%	50V
C225	1-136-161-00	FILM	0.047MF	5%	50V
C226	1-110-205-00	MYLAR	0.0068MF	5%	50V
C227	1-136-153-00	FILM	0.01MF	5%	50V
C228	1-123-369-00	ELECT	4.7MF	20%	25V
C229	1-123-382-00	ELECT	3.3MF	20%	50V
C231	1-136-162-00	FILM	0.056MF	5%	50V
C232	1-123-318-00	ELECT	33MF	20%	10V
C233	1-136-153-00	FILM	0.01MF	5%	50V
C234	1-110-200-00	MYLAR	0.0027MF	5%	50V
C235	1-136-157-00	FILM	0.022MF	5%	50V
C236	1-110-205-00	MYLAR	0.0068MF	5%	50V
C238	1-123-369-00	ELECT	4.7MF	20%	25V
C240	1-136-272-00	FILM	68PF	5%	630V
C241	1-136-271-00	FILM	56PF	5%	630V
C301	1-123-308-00	ELECT	220MF	20%	10V
C302	1-123-382-00	ELECT	3.3MF	20%	50V
C303	1-123-306-00	ELECT	47MF	20%	10V
C304	1-123-306-00	ELECT	47MF	20%	10V
C305	1-123-308-00	ELECT	220MF	20%	10V
C306	1-123-321-00	ELECT	220MF	20%	16V
C307	1-123-381-00	ELECT	2.2MF	20%	50V
C308	1-123-356-00	ELECT	10MF	20%	16V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C309	1-123-356-00	ELECT	10MF	20%	16V
C311	1-123-379-00	ELECT	0.47MF	20%	50V
C312	1-123-356-00	ELECT	10MF	20%	16V
C313	1-130-289-00	FILM	0.0047MF	5%	100V
C314	1-130-289-00	FILM	0.0047MF	5%	100V
C315	1-130-295-00	FILM	0.0082MF	5%	100V
C316	1-129-713-00	FILM	0.0082MF	10%	630V
C317	1-129-898-00	FILM	0.0022MF	10%	630V
C318	1-129-705-00	FILM	0.0018MF	10%	630V
C319	1-123-321-00	ELECT	220MF	20%	16V
C320	1-123-332-00	ELECT	47MF	20%	16V
C321	1-123-318-00	ELECT	33MF	20%	10V
C401	1-123-333-00	ELECT	100MF	20%	16V
C402	1-123-321-00	ELECT	220MF	20%	16V
C403	1-123-306-00	ELECT	47MF	20%	10V
C404	1-123-298-00	ELECT	470MF	20%	6.3V
C405	1-162-304-31	CERAMIC	0.0047MF	20%	16V
C406	1-110-206-00	MYLAR	0.0082MF	5%	50V
C407	1-123-381-00	ELECT	2.2MF	20%	50V
C408	1-123-356-00	ELECT	10MF	20%	16V
C409	1-123-611-00	ELECT	1MF	20%	50V
C410	1-123-380-00	ELECT	1MF	20%	50V
C411	1-123-307-00	ELECT	100MF	20%	10V
C412	1-123-321-00	ELECT	220MF	20%	16V
C413	1-123-380-00	ELECT	1MF	20%	50V
C414	1-123-380-00	ELECT	1MF	20%	50V
C415	1-123-308-00	ELECT	220MF	20%	10V
C416	1-123-381-00	ELECT	2.2MF	20%	50V
C417	1-161-494-00	CERAMIC	0.022MF	30%	25V
C501	1-123-381-00	ELECT	2.2MF	20%	50V
C502	1-162-284-31	CERAMIC	150PF	10%	50V
C503	1-162-284-31	CERAMIC	150PF	10%	50V
C504	1-123-356-00	ELECT	10MF	20%	16V
C505	1-162-282-31	CERAMIC	100PF	10%	50V
C601	1-161-494-00	CERAMIC	0.022MF	30%	25V
CN1	1-562-068-13	SOCKET, CONNECTOR 13P			
CN301	*1-564-509-11	PLUG, CONNECTOR 6P			
CN302	*1-564-505-11	PLUG, CONNECTOR 2P			
CN303	*1-564-505-11	PLUG, CONNECTOR 2P			
CN401	*1-564-508-11	PLUG, CONNECTOR 5P			
CN402	*1-564-508-11	PLUG, CONNECTOR 5P			
CN403	*1-564-508-11	PLUG, CONNECTOR 5P			
CN801	*1-564-336-00	PIN, CONNECTOR 2P			
CN802	*1-564-338-00	PIN, CONNECTOR 4P			
CN803	*1-564-339-00	PIN, CONNECTOR 5P			
CN805	*1-564-341-11	PIN, CONNECTOR 7P			
CT301	1-141-225-00	CAP, TUNING, TRIMAR			
D101	8-719-107-94	DIODE 1SS202-1			
D102	8-719-107-94	DIODE 1SS202-1			
D201	8-719-107-94	DIODE 1SS202-1			
D202	8-719-107-94	DIODE 1SS202-1			
D301	8-719-107-94	DIODE 1SS202-1			
D302	8-719-107-94	DIODE 1SS202-1			
D303	8-719-107-94	DIODE 1SS202-1			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D304	8-719-107-94	DIODE 1SS202-1
D305	8-719-107-94	DIODE 1SS202-1
D306	8-719-910-11	DIODE HZ11A1L
D307	8-719-107-94	DIODE 1SS202-1
D308	8-719-107-94	DIODE 1SS202-1
D309	8-719-107-94	DIODE 1SS202-1
D310	8-719-107-94	DIODE 1SS202-1
D401	8-719-910-18	DIODE HZ11C2L
D402	8-719-910-64	DIODE HZ6B1L
D403	8-719-107-94	DIODE 1SS202-1
D404	8-719-107-94	DIODE 1SS202-1
D405	8-719-107-94	DIODE 1SS202-1
D406	8-719-107-94	DIODE 1SS202-1
D407	8-719-107-94	DIODE 1SS202-1
D408	8-719-107-94	DIODE 1SS202-1
D409	8-719-107-94	DIODE 1SS202-1
D410	8-719-107-94	DIODE 1SS202-1
D411	8-719-107-94	DIODE 1SS202-1
D412	8-719-107-94	DIODE 1SS202-1
D413	8-719-107-94	DIODE 1SS202-1
D414	8-719-107-94	DIODE 1SS202-1
D415	8-719-107-94	DIODE 1SS202-1
D417	8-719-107-94	DIODE 1SS202-1
D501	8-719-107-94	DIODE 1SS202-1
D502	8-719-107-94	DIODE 1SS202-1
D503	8-719-107-94	DIODE 1SS202-1
D601	8-719-920-03	DIODE GL-8PG1
D602	8-719-920-03	DIODE GL-8PG1
D603	8-719-920-03	DIODE GL-8PG1
D604	8-719-918-65	DIODE GL-1PR102
D605	8-719-918-66	DIODE GL-1HY102
D606	8-719-918-67	DIODE GL-1EG102
D801	8-719-107-94	DIODE 1SS202-1
HE101	X-3319-616-1	HEAD UNIT ASSY
HRP101	X-3319-616-1	HEAD UNIT ASSY
IC301	8-759-800-36	IC LA3160
IC302	8-759-800-92	IC LA3220
IC303	8-752-018-70	IC CX20187
IC304	8-759-700-08	IC NJM4558S
IC401	8-759-204-31	IC TC9312N-001
IC402	8-759-700-46	IC CX10034
IC501	8-759-602-47	IC M50761-417P
L101	1-408-923-00	MICRO INDUCTOR 8.2MMH
L104	1-408-930-00	MICRO INDUCTOR 33MMH
L201	1-408-923-00	MICRO INDUCTOR 8.2MMH
L204	1-408-930-00	MICRO INDUCTOR 33MMH
L301	1-408-096-00	MICRO INDUCTOR 470UH
L501	1-408-579-00	MICRO INDUCTOR 220UH
M802	1-541-239-00	MOTOR (CAPSTAIN)
PHI401	8-719-902-90	PHOTO INTERRUPTOR SPI201-20
Q101	8-729-900-89	TRANSISTOR DTC144ES
Q102	8-729-102-03	TRANSISTOR 2SD1020
Q103	8-729-606-33	TRANSISTOR 2SC2603F

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q104	8-729-900-89	TRANSISTOR DTC144ES
Q105	8-729-900-89	TRANSISTOR DTC144ES
Q106	8-729-900-89	TRANSISTOR DTC144ES
Q201	8-729-900-89	TRANSISTOR DTC144ES
Q202	8-729-102-03	TRANSISTOR 2SD1020
Q203	8-729-606-33	TRANSISTOR 2SC2603F
Q204	8-729-900-89	TRANSISTOR DTC144ES
Q205	8-729-900-89	TRANSISTOR DTC144ES
Q206	8-729-900-89	TRANSISTOR DTC144ES
Q301	8-729-606-33	TRANSISTOR 2SC2603F
Q302	8-729-606-33	TRANSISTOR 2SC2603F
Q303	8-729-900-89	TRANSISTOR DTC144ES
Q304	8-729-900-89	TRANSISTOR DTC144ES
Q305	8-729-117-54	TRANSISTOR 2SA1175
Q306	8-729-900-65	TRANSISTOR DTA144ES
Q309	8-729-801-93	TRANSISTOR 2SD1387
Q310	8-729-606-33	TRANSISTOR 2SC2603F
Q311	8-729-606-33	TRANSISTOR 2SC2603F
Q312	8-729-154-82	TRANSISTOR 2SB548-R
Q313	8-729-606-33	TRANSISTOR 2SC2603F
Q314	8-729-606-33	TRANSISTOR 2SC2603F
Q315	8-729-900-89	TRANSISTOR DTC144ES
Q401	8-729-180-92	TRANSISTOR 2SD809-K
Q404	8-729-180-92	TRANSISTOR 2SD809-K
Q405	8-729-117-54	TRANSISTOR 2SA1175
Q406	8-729-900-89	TRANSISTOR DTC144ES
Q407	8-729-900-89	TRANSISTOR DTC144ES
Q408	8-729-900-89	TRANSISTOR DTC144ES
Q409	8-729-900-89	TRANSISTOR DTC144ES
Q410	8-729-900-89	TRANSISTOR DTC144ES
Q411	8-729-900-89	TRANSISTOR DTC144ES
Q412	8-729-900-65	TRANSISTOR DTA144ES
Q413	8-729-900-80	TRANSISTOR DTA114ES
Q414	8-729-801-93	TRANSISTOR 2SD1387
Q415	8-729-801-93	TRANSISTOR 2SD1387
Q416	8-729-801-83	TRANSISTOR 2SB1013
Q417	8-729-801-83	TRANSISTOR 2SB1013
Q418	8-729-180-92	TRANSISTOR 2SD809-K
Q419	8-729-900-89	TRANSISTOR DTC144ES
Q420	8-729-801-93	TRANSISTOR 2SD1387
Q421	8-729-900-65	TRANSISTOR DTA144ES
Q422	8-729-900-89	TRANSISTOR DTC144ES
Q423	8-729-900-65	TRANSISTOR DTA144ES
Q424	8-729-900-65	TRANSISTOR DTA144ES
Q425	8-729-900-65	TRANSISTOR DTA144ES
Q426	8-729-900-65	TRANSISTOR DTA144ES
Q501	8-729-900-65	TRANSISTOR DTA144ES
Q502	8-729-900-65	TRANSISTOR DTA144ES
Q601	8-729-606-33	TRANSISTOR 2SC2603F
R101	1-249-434-11	CARBON 27K 5% 1/6W
R102	1-247-883-00	CARBON 150K 5% 1/6W
R103	1-249-425-11	CARBON 4.7K 5% 1/6W
R104	1-247-808-00	CARBON 110 5% 1/6W
R105	1-249-421-11	CARBON 2.2K 5% 1/6W
R106	1-249-421-11	CARBON 2.2K 5% 1/6W
R107	1-247-841-00	CARBON 2.7K 5% 1/6W
R108	1-247-887-00	CARBON 220K 5% 1/6W
R109	1-247-823-00	CARBON 470 5% 1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R110	1-249-437-11	CARBON 47K 5% 1/6W
R111	1-247-829-00	CARBON 820 5% 1/6W
R112	1-249-421-11	CARBON 2.2K 5% 1/6W
R113	1-247-859-00	CARBON 15K 5% 1/6W
R114	1-247-815-00	CARBON 220 5% 1/6W
R115	1-247-827-00	CARBON 680 5% 1/6W
R116	1-249-429-11	CARBON 10K 5% 1/6W
R117	1-249-419-11	CARBON 1.5K 5% 1/6W
R118	1-247-831-00	CARBON 1K 5% 1/6W
R119	1-247-831-00	CARBON 1K 5% 1/6W
R120	1-247-831-00	CARBON 1K 5% 1/6W
R121	1-247-846-00	CARBON 4.3K 5% 1/6W
R122	1-247-841-00	CARBON 2.7K 5% 1/6W
R123	1-249-421-11	CARBON 2.2K 5% 1/6W
R124	1-247-879-00	CARBON 100K 5% 1/6W
R125	1-249-421-11	CARBON 2.2K 5% 1/6W
R126	1-247-822-00	CARBON 430 5% 1/6W
R127	1-247-851-00	CARBON 6.8K 5% 1/6W
R128	1-247-827-00	CARBON 680 5% 1/6W
R129	1-249-433-11	CARBON 22K 5% 1/6W
R130	1-247-841-00	CARBON 2.7K 5% 1/6W
R131	1-249-429-11	CARBON 10K 5% 1/6W
R132	1-247-879-00	CARBON 100K 5% 1/6W
R133	1-247-831-00	CARBON 1K 5% 1/6W
R134	1-247-867-00	CARBON 33K 5% 1/6W
R135	1-247-867-00	CARBON 33K 5% 1/6W
R136	1-247-831-00	CARBON 1K 5% 1/6W
R138	1-247-819-00	CARBON 330 5% 1/6W
R139	1-249-425-11	CARBON 4.7K 5% 1/6W
R140	1-247-849-00	CARBON 5.6K 5% 1/6W
R141	1-247-841-00	CARBON 2.7K 5% 1/6W
R142	1-247-845-00	CARBON 3.9K 5% 1/6W
R143	1-249-421-11	CARBON 2.2K 5% 1/6W
R144	1-247-845-00	CARBON 3.9K 5% 1/6W
R145	1-247-879-00	CARBON 100K 5% 1/6W
R146	1-249-429-11	CARBON 10K 5% 1/6W
R201	1-249-434-11	CARBON 27K 5% 1/6W
R202	1-247-883-00	CARBON 150K 5% 1/6W
R203	1-249-425-11	CARBON 4.7K 5% 1/6W
R204	1-247-808-00	CARBON 110 5% 1/6W
R205	1-249-421-11	CARBON 2.2K 5% 1/6W
R206	1-249-421-11	CARBON 2.2K 5% 1/6W
R207	1-247-841-00	CARBON 2.7K 5% 1/6W
R208	1-247-887-00	CARBON 220K 5% 1/6W
R209	1-247-823-00	CARBON 470 5% 1/6W
R210	1-249-437-11	CARBON 47K 5% 1/6W
R211	1-247-829-00	CARBON 820 5% 1/6W
R212	1-249-421-11	CARBON 2.2K 5% 1/6W
R213	1-247-859-00	CARBON 15K 5% 1/6W
R214	1-247-815-00	CARBON 220 5% 1/6W
R215	1-247-827-00	CARBON 680 5% 1/6W
R216	1-249-429-11	CARBON 10K 5% 1/6W
R217	1-249-419-11	CARBON 1.5K 5% 1/6W
R218	1-247-831-00	CARBON 1K 5% 1/6W
R219	1-247-831-00	CARBON 1K 5% 1/6W
R220	1-247-831-00	CARBON 1K 5% 1/6W
R221	1-247-846-00	CARBON 4.3K 5% 1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R222	1-247-841-00	CARBON	2.7K	5%	1/6W
R223	1-249-421-11	CARBON	2.2K	5%	1/6W
R224	1-247-879-00	CARBON	100K	5%	1/6W
R225	1-249-421-11	CARBON	2.2K	5%	1/6W
R226	1-247-822-00	CARBON	430	5%	1/6W
R227	1-247-851-00	CARBON	6.8K	5%	1/6W
R228	1-247-827-00	CARBON	680	5%	1/6W
R229	1-249-433-11	CARBON	22K	5%	1/6W
R230	1-247-841-00	CARBON	2.7K	5%	1/6W
R231	1-249-429-11	CARBON	10K	5%	1/6W
R232	1-247-879-00	CARBON	100K	5%	1/6W
R233	1-247-831-00	CARBON	1K	5%	1/6W
R234	1-247-867-00	CARBON	33K	5%	1/6W
R235	1-247-867-00	CARBON	33K	5%	1/6W
R236	1-247-831-00	CARBON	1K	5%	1/6W
R238	1-247-819-00	CARBON	330	5%	1/6W
R239	1-249-425-11	CARBON	4.7K	5%	1/6W
R240	1-247-849-00	CARBON	5.6K	5%	1/6W
R241	1-247-841-00	CARBON	2.7K	5%	1/6W
R242	1-247-845-00	CARBON	3.9K	5%	1/6W
R243	1-249-421-11	CARBON	2.2K	5%	1/6W
R244	1-247-845-00	CARBON	3.9K	5%	1/6W
R245	1-247-879-00	CARBON	100K	5%	1/6W
R246	1-249-429-11	CARBON	10K	5%	1/6W
R301	1-247-224-00	CARBON	220	5%	1/2W
R302	1-249-433-11	CARBON	22K	5%	1/6W
R303	1-247-843-00	CARBON	3.3K	5%	1/6W
R304	1-249-425-11	CARBON	4.7K	5%	1/6W
R305	1-247-875-00	CARBON	68K	5%	1/6W
R306	1-247-903-00	CARBON	1M	5%	1/6W
R307	1-247-807-00	CARBON	100	5%	1/6W
R308	1-247-879-00	CARBON	100K	5%	1/6W
R309	1-247-224-00	CARBON	220	5%	1/2W
R310	1-249-437-11	CARBON	47K	5%	1/6W
R311	1-249-437-11	CARBON	47K	5%	1/6W
R312	1-249-425-11	CARBON	4.7K	5%	1/6W
R313	1-249-437-11	CARBON	47K	5%	1/6W
R314	1-214-777-00	METAL	100K	1%	1/4W
R315	1-249-429-11	CARBON	10K	5%	1/6W
R318	1-249-429-11	CARBON	10K	5%	1/6W
R319	1-249-414-11	CARBON	560	5%	1/6W
R320	1-247-844-00	CARBON	3.6K	5%	1/6W
R321	1-247-848-00	CARBON	5.1K	5%	1/6W
R322	1-249-429-11	CARBON	10K	5%	1/6W
R323	1-247-853-00	CARBON	8.2K	5%	1/6W
R324	1-247-853-00	CARBON	8.2K	5%	1/6W
R325	1-247-080-00	CARBON	5.6	5%	1/4W
R326	1-249-434-11	CARBON	27K	5%	1/6W
R327	1-249-429-11	CARBON	10K	5%	1/6W
R328	1-247-831-00	CARBON	1K	5%	1/6W
R329	1-249-421-11	CARBON	2.2K	5%	1/6W
R330	1-247-831-00	CARBON	1K	5%	1/6W
R331	1-249-421-11	CARBON	2.2K	5%	1/6W
R332	1-247-879-00	CARBON	100K	5%	1/6W
R401	1-247-751-11	CARBON	820	5%	1/2W
R404	1-247-212-00	CARBON	68	5%	1/2W
R405	1-247-212-00	CARBON	68	5%	1/2W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R406	1-249-421-11	CARBON	2.2K	5%	1/6W
R407	1-247-867-00	CARBON	33K	5%	1/6W
R408	1-249-425-11	CARBON	4.7K	5%	1/6W
R409	1-247-811-00	CARBON	150	5%	1/6W
R410	1-247-823-00	CARBON	470	5%	1/6W
R411	1-247-815-00	CARBON	220	5%	1/6W
R412	1-247-815-00	CARBON	220	5%	1/6W
R413	1-247-819-00	CARBON	330	5%	1/6W
R414	1-249-429-11	CARBON	10K	5%	1/6W
R415	1-247-879-00	CARBON	100K	5%	1/6W
R416	1-249-433-11	CARBON	22K	5%	1/6W
R417	1-249-433-11	CARBON	22K	5%	1/6W
R418	1-249-429-11	CARBON	10K	5%	1/6W
R419	1-249-437-11	CARBON	47K	5%	1/6W
R420	1-249-425-11	CARBON	4.7K	5%	1/6W
R421	1-249-437-11	CARBON	47K	5%	1/6W
R422	1-247-879-00	CARBON	100K	5%	1/6W
R423	1-247-831-00	CARBON	1K	5%	1/6W
R424	1-247-879-00	CARBON	100K	5%	1/6W
R425	1-249-429-11	CARBON	10K	5%	1/6W
R426	1-247-859-00	CARBON	15K	5%	1/6W
R427	1-247-831-00	CARBON	1K	5%	1/6W
R428	1-247-831-00	CARBON	1K	5%	1/6W
R429	1-247-831-00	CARBON	1K	5%	1/6W
R430	1-247-831-00	CARBON	1K	5%	1/6W
R431	1-247-832-00	CARBON	1.1K	5%	1/6W
R432	1-249-419-11	CARBON	1.5K	5%	1/6W
R433	1-249-419-11	CARBON	1.5K	5%	1/6W
R434	1-247-831-00	CARBON	1K	5%	1/6W
R437	1-249-432-11	CARBON	18K	5%	1/6W
R438	1-247-795-00	CARBON	33	5%	1/6W
R439	1-249-429-11	CARBON	10K	5%	1/6W
R440	1-249-429-11	CARBON	10K	5%	1/6W
R441	1-247-857-00	CARBON	12K	5%	1/6W
R442	1-249-425-11	CARBON	4.7K	5%	1/6W
R443	1-247-809-00	CARBON	120	5%	1/6W
R444	1-247-833-00	CARBON	1.2K	5%	1/6W
R445	1-247-869-00	CARBON	39K	5%	1/6W
R446	1-247-873-00	CARBON	56K	5%	1/6W
R447	⚠1-217-391-00	FUSIBLE	22	5%	1/4W F
R448	1-249-421-11	CARBON	2.2K	5%	1/6W
R501	1-249-429-11	CARBON	10K	5%	1/6W
R502	1-247-903-00	CARBON	1M	5%	1/6W
R503	1-247-841-00	CARBON	2.7K	5%	1/6W
R504	1-247-879-00	CARBON	100K	5%	1/6W
R505	1-249-432-11	CARBON	18K	5%	1/6W
R506	1-249-425-11	CARBON	4.7K	5%	1/6W
R507	1-249-433-11	CARBON	22K	5%	1/6W
R601	1-247-809-00	CARBON	120	5%	1/6W
R602	1-249-429-11	CARBON	10K	5%	1/6W
R603	1-247-867-00	CARBON	33K	5%	1/6W
RV101	1-228-995-00	RES, ADJ, CARBON 22K			
RV102	1-228-994-00	RES, ADJ, CARBON 10K			
RV201	1-228-995-00	RES, ADJ, CARBON 22K			
RV202	1-228-994-00	RES, ADJ, CARBON 10K			
RY301	1-515-535-11	RELAY			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
S1	1-554-691-00	SWITCH, SLIDE (DOLBY NR)
S2	1-554-691-00	SWITCH, SLIDE (TIMER)
S3	1-514-674-21	SWITCH, SLIDE (DIRECTION)
S301	1-554-277-00	SWITCH, SLIDE (ISS)
S601	1-553-856-00	SWITCH, KEY BOARD (STOP)
S602	1-553-856-00	SWITCH, KEY BOARD (REW)
S603	1-553-856-00	SWITCH, KEY BOARD (FF)
S604	1-553-856-00	SWITCH, KEY BOARD (FWD)
S605	1-553-856-00	SWITCH, KEY BOARD (REV)
S606	1-553-856-00	SWITCH, KEY BOARD (PAUSE)
S607	1-553-856-00	SWITCH, KEY BOARD (REC)
S608	1-553-856-00	SWITCH, KEY BOARD (REC MUTE)
S609	1-553-856-00	SWITCH, KEY BOARD (AMS)
S801	1-554-883-11	SWITCH, SLIDE (DIRECTION)
S802	1-553-856-00	SWITCH, KEY BOARD (HALF DET)
S803	1-553-856-00	SWITCH, KEY BOARD (70/120 U)
S804	1-553-856-00	SWITCH, KEY BOARD (METAL)
S805	1-553-856-00	SWITCH, KEY BOARD (ERASE PROOF/FWD)
S806	1-553-856-00	SWITCH, KEY BOARD (ERASE PROOF/REV)
SPK101	1-235-186-00	ENCAPSULATED COMPONENT
SPK201	1-235-186-00	ENCAPSULATED COMPONENT
T301	1-433-281-11	TRANSFORMER, BIAS OSCILLATOR
X501	1-527-532-00	OSCILLATOR, CERAMIC